

DMC FILE COPY AD A 193 099

AD

2
LEVEL II

TECHNICAL REPORT
NATICK/TR-81/032

INTEGRATED SIZE PROGRAMS
FOR
U.S. ARMY MEN AND WOMEN

BY

KATHLEEN M. ROBINETTE
THOMAS CHURCHILL
AND
ELO TROJETTS

ANTHROPOLOGY RESEARCH PROJECT
YELLOW SPRINGS, OHIO

JULY 1981

1 DTIC
S ELECTED
D JAN 7 1982
D

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED.

INDIVIDUAL PROTECTION LABORATORY
PL-230

82 01 07 014

Approved for public release; distribution unlimited.

Citation of trade names in this report does not constitute an official endorsement or approval of the use of such items.

Destroy this report when no longer needed. Do not return it to the originator.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NATICK/TR-81/032	2. GOVT ACCESSION NO. AD 41693C9	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) INTEGRATED SIZE PROGRAMS FOR U.S. ARMY MEN AND WOMEN		5. TYPE OF REPORT & PERIOD COVERED Technical Report
7. AUTHOR(s) Kathleen M. Robinette Thomas Churchill Ilse Tebbets		6. PERFORMING ORG. REPORT NUMBER IPL-236
8. PERFORMING ORGANIZATION NAME AND ADDRESS Anthropology Research Project, Inc. 503 Xenia Avenue Yellow Springs, Ohio 45387		9. CONTRACT OR GRANT NUMBER(s) DAAK60-79-C-0097
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Natick R & D Laboratories ATTN: DRDNA-VCA Natick, Massachusetts 01760		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 62723A 1L162723AH98A
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		12. REPORT DATE July 1981
		13. NUMBER OF PAGES 93
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Anthropometry U.S. Army Field Clothing Measurement(s) Military Personnel Sizing (Clothing) Body Size Men Clothing Design Sizes (Dimensions) Women Size Values		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Appearing in this report for the first time are anthropometric sizing programs developed for Army field clothing to be worn by both men and women. Dimensional data were derived from a statistical analysis of body size data obtained from Army men and women, and take into account not only size differentials but the marked proportional differences which exist between the two sexes. Formatted for use by clothing designers and patternmakers, the bulk of the report consists of sizing tables which include recommended design values		

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

20. ABSTRACT (continued)

for a total of 26 dimensions for each of 20 sizes. Two separate programs are given, one devised for upper body garments and one for lower body garments.

Although clothing designs based on these sizing programs have not, at this writing, been executed and field tested, these data are felt to be the most promising yet available to accommodate all Army personnel.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

PREFACE

The data in this report were assembled and computed by the staff of the Anthropology Research Project in Yellow Springs, Ohio, under the direction of senior investigator, John T. McConville. The work was done under contract No. DAAK60-79-C-0097 with the U.S. Army Natick Research and Development Laboratories, Natick, Massachusetts. Robert M. White was contract monitor and offered considerable help in shaping the format and substance of this report.

Jane Reese compiled the manuscript with her usual meticulous care and Jean Bolin contributed graphic support. Original drawings appearing in Appendix A were executed by Kay Downing.

Accession For	
NTIS CRAZI	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Distr	Avail and/or Special
A	

CONTENTS

	<u>Page</u>
ILLUSTRATIVE DATA.....	4
SECTION I INTRODUCTION.....	7
SECTION II THE SIZING PROGRAMS.....	13
Upper Body.....	14
Lower Body.....	56
APPENDIX A Visual Index and Measurement Descriptions.....	79
APPENDIX B Procedures for Computing Size Values.....	91

PRECEDING PAGE BLANK-NOT FILMED

ILLUSTRATIVE DATA

<u>Figure</u>		<u>Page</u>
1	Coat, combat, Woodland Camouflage Pattern.....	8
2	Trousers, combat, Woodland Camouflage Pattern.....	8

Table

20-SIZE PROGRAM FOR THE UPPER BODY

1	Upper Body Program Bivariate with Size Categories.....	14
2	Upper Body Program Size Categories and Tariff.....	15

Size Categories

3	X-Small Short.....	16
4	X-Small Regular.....	18
5	Small X-Short.....	20
6	Small Short.....	22
7	Small Regular.....	24
8	Small Long.....	26
9	Medium X-Short.....	28
10	Medium Short.....	30
11	Medium Regular.....	32
12	Medium Long.....	34
13	Large Short.....	36
14	Large Regular.....	38
15	Large Long.....	40
16	Large X-Long.....	42
17	X-Large Regular.....	44
18	X-Large Long.....	46
19	X-Large X-Long.....	48
20	XX-Large Regular.....	50
21	XX-Large Long.....	52
22	XX-Large X-Long.....	54

20-SIZE PROGRAM FOR THE LOWER BODY

23	Lower Body Program Bivariate with Size Categories.....	56
24	Lower Body Program Size Categories and Tariff.....	57

Size Categories

25	Small Short.....	58
26	Small Regular.....	59
27	Small Long.....	60

ILLUSTRATIVE DATA (continued)

<u>Table</u>		<u>Page</u>
20-SIZE PROGRAM FOR THE LOWER BODY (cont'd)		
28	Small X-Long.....	61
29	Medium Short.....	62
30	Medium Regular.....	63
31	Medium Long.....	64
32	Medium X-Long.....	65
33	Medium XX-Long.....	66
34	Large Short.....	67
35	Large Regular.....	68
36	Large Long.....	69
37	Large X-Long.....	70
38	X-Large Short.....	71
39	X-Large Regular.....	72
40	X-Large Long.....	73
41	X-Large X-Long.....	74
42	XX-Large Regular.....	75
43	XX-Large Long.....	76
44	XX-Large X-Long.....	77

INTEGRATED SIZE PROGRAMS
FOR U.S. ARMY MEN AND WOMEN

Section I

INTRODUCTION

The sizing programs described here are the result of a detailed examination of the body size variability of U.S. Army personnel conducted with the object of developing a sizing system for field clothing and equipment to be used by both men and women. While this system was devised for the Woodland Camouflage Pattern coat and trousers pictured in Figures 1 and 2, the sizing data, once fully validated by fit-testing, should be useful in the design and sizing of a variety of upper- and lower-body garments.

Until recently, U.S. Army women, commissioned or enlisted, were largely restricted to clerical or medical positions and, as a consequence, the items of special clothing, personal-protective equipment and work stations they needed were limited. Currently, Army women are assigned to every organizational level and occupational specialty except actual combat roles, and it now becomes necessary to design for them a range of special clothing and protective equipment comparable to that which exists for Army men. Hence the need to examine the feasibility of developing integrated sizing programs for Army male and female personnel.

Women can, of course, be well-fitted in items sized specifically for them, but the design, development and storage of uniquely male and uniquely female clothing and equipment duplicated at all echelons is obviously a costly and complicated solution to the problem.

A second, more logically practical, alternative has been the attempt to add smaller sizes to existing men's sizes but this solution has resulted in garments ill-fitted to accommodate women who are not, after all, smaller versions of men. In fact, women's hip dimensions are, on the average and on the whole, larger than men's so that the attempt to scale some trouser measurements down causes more fit problems than it solves. Shoulders are another problem area since, at all size levels, men of the same height and weight as women have considerably broader shoulders.

Basically, the difficulties of devising an integrated sizing system for both men and women lie not so much in the area of size discrepancies as in the problem of differences in proportions.

An anthropometric sizing analysis for clothing is based on the concept of dividing the population into subgroups of individuals who are more or less similar in certain key body size dimensions (such as, tall and slender, short and heavy, etc.) and then analyzing the body size data for these subgroups in order to arrive at appropriate dimensional design values which will accommodate the size variability within each group. Crucial to the success of any sizing program is the identification of the key dimensions by which the garment will be sized.

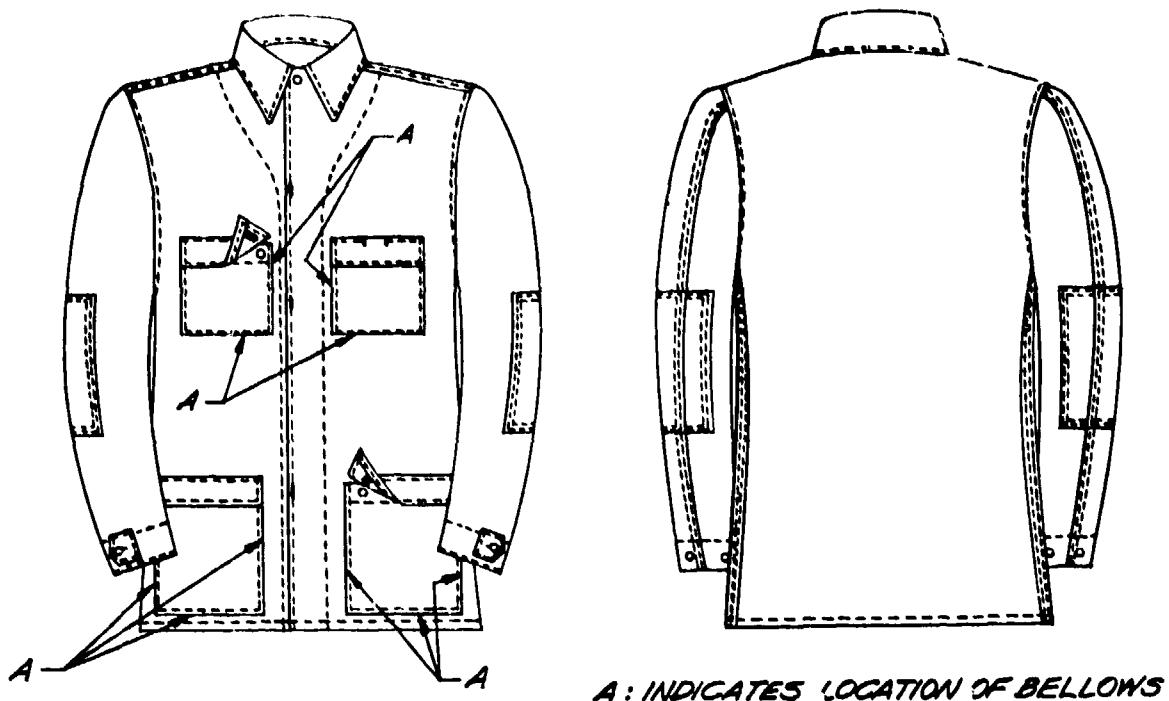


Figure 1. Coat, combat, Woodland Camouflage Pattern.*

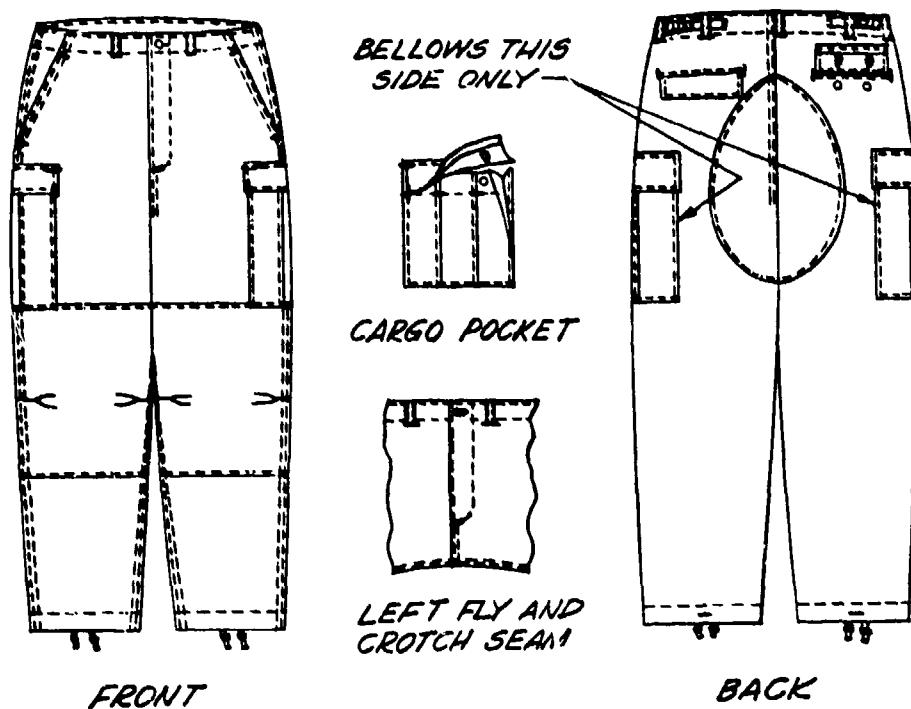


Figure 2. Trousers, combat, Woodland Camouflage Pattern.*

* Reproduced from MIL-C-44048, 6 August 1981 and MIL-T-44047, 5 August 1981, respectively.

The key dimensions of choice in a number of current (single sex) programs for sizing military clothing are: chest or bust circumference and stature for upper body garments; and waist circumference and crotch height for trousers. These key dimensions work well because they serve to "control" body variability in a predictable way. That is, as chest circumference, for example, gets bigger, other girth and breadth dimensions increase correspondingly; as persons are taller, they are also found to increase in other linear dimensions. In brief, men's or women's bodies are usually found to be larger or smaller in roughly constant proportions. This convenient phenomenon, however, does not hold true for several important sizing dimensions when men and women are combined into one user population.

The problem, fortunately, may not be an insoluble one. Statistical analysis shows that an integrated sizing program has a high potential for success when the two problem dimensions -- shoulders and hips -- are incorporated in the key sizing dimensions. Thus, key sizing dimensions established for the field uniform coat are shoulder circumference and stature, while those selected for the trousers are hip circumference and crotch height. Details of the sizing analysis appear in a companion report (McConville, Robinette and White, 1981, in press)* and the logic for the selection of these key dimensions for purposes of an integrated program will not be reiterated here. Suffice it to say that the slightly unusual sizing designations which would appear on the integrated field clothing labels is essential in meeting the unique challenge involved in amalgamating men's and women's clothing into a single system which provides an acceptable fit for both sexes.

The anthropometry used for this sizing analysis was drawn from two sources: the Army men's data were obtained from a survey of 6,682 subjects in a 1966 survey conducted under the supervision of Natick Laboratories anthropologists (White and Churchill, 1971);** the Army women's data were obtained in a 1977 survey of 1,330 subjects, also under the aegis of Natick Laboratories (Churchill et al., 1977).†

* John T. McConville, Kathleen M. Robinette, and Robert M. White. 1981. An Investigation of Integrated Sizing for U.S. Army Men and Women. Technical Report NATICK/TR-81/033, U.S. Army Natick Research and Development Laboratories, Natick, Massachusetts (in press).

** Robert M. White and Edmund Churchill. 1971. The Body Size of Soldiers, U.S. Anthropometry-1966. Technical Report 72-51-CE, U.S. Army Natick Laboratories, Natick, Massachusetts. (AD 743 465)

† Edmund Churchill, Thomas Churchill, John T. McConville, and Robert M. White. 1977. Anthropometry of Women of the U.S. Army--1977, Report No. 2 - The Basic Univariate Statistics. Technical Report NATICK/TR-77/024, U.S. Army Natick Research and Development Command, Natick, Massachusetts. (AD A044 806)

As somewhat different measurements were made in the two surveys, it was necessary to determine which dimensions were measured in both surveys prior to the beginning of the sizing analysis. It was possible to establish that some 27 dimensions were relevant to the design of clothing and that most of them were essentially comparable in the two surveys. These dimensions are listed, described and illustrated in Appendix A.

Appearing in Section II are two 20-size integrated size programs for upper body and lower body garments, respectively. Not every size category contains both males and females. In the lower body size program, five of the 20 size categories are exclusively female, nine are integrated sizes, and six are exclusively male. This does not necessarily mean that no persons fall within the limits of the sizing dimensions for a particular size category designated for the opposite sex. It does mean that if there were members of the opposite sex in that category, they were so few in frequency as to be ignored. In the size category Small-Short for the lower body, for example, the men who fell within the boundaries of the size category represent less than one-tenth of one percent (less than one per thousand for procurement purposes) and thus are discounted, with the assumption that they will be accommodated by that size (computed from female dimensions) or by one of the adjacent integrated sizes.

The distribution of men and women in the sample population and the size categories into which they have been divided are graphically shown in the double bivariate frequency tables, Tables 1 and 23, which respectively precede the upper and lower sizing programs. As can be seen with reference to Table 1 on page 14, the bivariate represents the numbers of men and women who fall within each one-inch increment of stature and shoulder circumference, the key dimensions for upper body garments. In each small box the number of men appear on the left of the slash and the number of women on the right. As noted above, large areas of the size distribution are occupied solely or largely by members of one sex and the nature of the superimposed size category reflects this. The shaded size categories denote integrated sizes -- that is, sizes which reflect both men's and women's measurements -- while the unshaded areas at upper right and lower left designate sizes based wholly on men's or women's measurements, respectively.

Accompanying each bivariate on facing pages are Tables 2 and 24 in which size categories are listed by adjectival names; the upper and lower boundary of each size are numerically designated; and the anticipated tariff (procurement requirements) are given for each size. A study of Table 2 on page 15, for example, shows that persons who are size Small Short are all those whose shoulder circumferences are between 38 and 40.99 inches and who are also between 61 and 64.99 inches tall. The tariff columns indicate that for every 1,000 persons in the user population, there will be 12 men and 281 women requiring size Small Short in an upper body item.

The dimensional data of particular interest to designers appear in Tables 3-22 for upper body garments and in Tables 25-44 for lower body garments. With reference, once more, to the upper garment size Small Short (Table 6, page 22), it can be seen that the key dimension size ranges and tariff are listed at the top of the table to identify the boundaries of the

size category and the distribution of men and women to be found in it. The mid-size values correspond roughly to mean values for a given dimension while the SZ-SD's (within-a-size standard deviation) correspond to the standard deviation which usually accompanies mean values.* What these figures mean, basically, is this: taking sleeve inseam as an example, the average inseam length for men in this size category will be 17.43 inches, for women 17.39 inches. The SZ-SD or standard deviation is a statistical value which is added to the mid-size or mean to compute how large or small persons at the extreme ends of the distribution will be. The mean value plus or minus one SD normally encompasses about two-thirds of the subjects in a normal distribution. A somewhat higher multiple of the SZ-SD is used to arrive at a range of values which will accommodate 90% (rather than two-thirds) of the user population. As can be seen, the range of sleeve inseams to be accommodated by persons in the Small Short size category ranges from 16.12 inches to a high of 18.75 inches. Since the designer or pattern-maker requires a single value for a sleeve inseam, recommended design values have been calculated for each dimension in each size category and are highlighted in the last column of each sizing table. The "Range-to-be-Accommodated" column will give the designer an idea of the amount of adjustability which may be required in any area where a closer fit may be desirable or possible.

It should be stressed, at this point, that the recommended values given for each dimension in each size category are the nude body measurements and not the pattern or tailoring values for which appropriate increments, such as seam allowances, must be added.

The sizing programs which follow are based, for the first time, on an authentically integrated approach to the body size variations to be found in a large heterogeneous population of men and women. The data are thought to be the best available but they are, as yet, untested in practice. The final steps to be undertaken for validation include the design and fabrication of prototype garments and the anthropometric fit-testing of these items on a representative sample of Army personnel.

* A detailed explanation of mid-size values and SZ-SD's is given in Appendix B for those interested in the statistical derivation and rationale of these values.

SECTION II

THE SIZING PROGRAMS
Upper Body
Lower Body

RECORDED PAGE BLANK-NOT FILMED

TABLE 1
**UPPER BODY PROGRAM BIVARIATE
 WITH SIZE CATEGORIES***
(1966 Army Men / 1977 Army Women)

* Slash-marked categories are those which are integrated.

TABLE 2

 UPPER BODY PROGRAM
 SIZE CATEGORIES AND TARIFF

<u>Size</u>	<u>Shoulder Circ</u>	<u>Stature</u>	<u>Tariff per Thousand</u>	
			<u>Males</u>	<u>Females</u>
X-Small Short	35.00-37.99	60.00-63.99	0	146
X-Small Regular	35.00-37.99	64.00-67.99	0	80
Small X-Short	38.00-40.99	57.00-60.99	0	45
Small Short	38.00-40.99	61.00-64.99	12	281
Small Regular	38.00-40.99	65.00-68.99	38	190
Small Long	38.00-40.99	69.00-72.99	14	15
Medium X-Short	41.00-43.99	58.00-61.99	0	22
Medium Short	41.00-43.99	62.00-65.99	62	131
Medium Regular	41.00-43.99	66.00-69.99	222	70
Medium Long	41.00-43.99	70.00-73.99	81	7
Large Short	44.00-46.99	62.00-65.99	47	6
Large Regular	44.00-46.99	66.00-69.99	231	7
Large Long	44.00-46.99	70.00-73.99	129	0
Large X-Long	44.00-46.99	74.00-77.99	10	0
X-Large Regular	47.00-49.99	65.00-68.99	47	0
X-Large Long	47.00-49.99	69.00-72.99	72	0
X-Large X-Long	47.00-49.99	73.00-76.99	13	0
XX-Large Regular	50.00-52.99	65.00-68.99	6	0
XX-Large Long	50.00-52.99	69.00-72.99	12	0
XX-Large X-Long	50.00-52.99	73.00-76.99	4	0
			1,000	1,000

Theoretical coverage of the male population = 98.3%
 Theoretical coverage of the female population = 95.6%

TABLE 3
20 SIZE PROGRAM FOR THE UPPER BODY*
X-SMALL SHORT

THE RANGE FOR STATURE 50.00 - 63.99
THE RANGE FOR SHOULDER CIRCUMFER 35.00 - 37.99

MALES N = 0 TARIFF PERCENTAGE = 0.00%
FEMALES N = 185 TARIFF PERCENTAGE = 14.50%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	107.74	10.91	89.74 - 125.75
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M			
	F	12.69	.47	11.91 - 13.46
SHOULDER HEIGHT	M			
	F	50.53	1.17	48.60 - 52.46
SLEEVE INSEAM	M			
	F	17.10	.77	15.83 - 18.36
STATURE	M			
	F	62.00	1.15	60.09 - 63.90
WAIST BACK LENGTH	M			
	F	15.58	.92	14.06 - 17.10
WAIST HEIGHT	M			
	F	38.45	1.23	36.42 - 40.49
*** ARCS/BREADTHS ***				
CHEST BREADTH	M			
	F	10.27	.47	9.49 - 11.04
HIP BREADTH	M			
	F	13.03	.78	11.73 - 14.32
INTERSCYE BACK	M			
	F	14.03	.74	12.81 - 15.25
SHOULDER BREADTH	M			
	F	15.37	.44	14.63 - 16.10
SHOULDER LENGTH	M			
	F	5.67	.38	5.03 - 6.30

*UNITS ARE INCHES OR POUNDS.

TABLE 3 (cont'd)

20 SIZE UPPER BODY
X-SMALL SHORT

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M			
	F	13.67	.65 12.60 - 14.74	14.26
BICEPS CIRC/FLEXED	M			
	F	9.60	.63 8.56 - 10.65	10.07
CHEST/BUST CIRC	M			
	F	31.82	1.65 29.09 - 34.54	33.22
HIP CIRCUMFERENCE	M			
	F	34.86	1.80 31.89 - 37.84	36.39
NECK CIRCUMFERENCE	M			
	F	12.13	.48 11.33 - 12.92	12.46
SHOULDER CIRC	M			
	F	36.50	.86 35.07 - 37.92	37.99
VERTICAL TRUNK CIR	M			
	F	57.56	1.97 54.30 - 60.81	59.57
WAIST CIRC	M			
	F	25.14	1.96 21.90 - 28.37	26.49
WRIST CIRC	M			
	F	5.53	.21 5.18 - 5.88	5.69

TABLE 4
20 SIZE PROGRAM FOR THE UPPER BODY*
X-SMALL REGULAR

THE RANGE FOR STATURE 64.00 - 67.99
THE RANGE FOR SHOULDER CIRCUMFERENCE 35.00 - 37.99

MALES N = 7 TARIFF PERCENTAGE = .11%
FEMALES N = 102 TARIFF PERCENTAGE = 7.99%

	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	116.27	10.91 98.27 - 134.28	
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M			
	F	13.53	.47 12.72 - 14.30	13.98
SHOULDER HEIGHT	M			
	F	54.05	1.17 52.12 - 55.98	55.86
SLEEVE INSEAM	M			
	F	18.29	.77 17.03 - 19.56	18.89
STATURE	M			
	F	66.00	1.15 64.09 - 67.90	
WAIST BACK LENGTH	M			
	F	16.41	.92 14.89 - 17.93	16.85
WAIST HEIGHT	M			
	F	41.35	1.23 39.32 - 43.38	42.75
*** ARCS/BREADTHS ***				
CHEST BREADTH	M			
	F	10.26	.47 9.48 - 11.04	10.68
HIP BREADTH	M			
	F	13.37	.78 12.08 - 14.66	13.89
INTERSCYE BACK	M			
	F	14.13	.74 12.91 - 15.35	14.58
SHOULDER BREADTH	M			
	F	15.46	.44 14.72 - 16.19	16.06
SHOULDER LENGTH	M			
	F	5.86	.38 5.23 - 6.49	6.02

*UNITS ARE INCHES OR POUNDS.

TABLE 4 (cont'd)

20 SIZE UPPER BODY
X-SMALL REGULAR

	SEX	MID-SIZE SZ-SD. VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M			
	F	13.86	.65 12.79 - 14.93	14.45
BICEPS CIRC/FLEXED	M			
	F	9.52	.83 8.48 - 10.57	9.99
CHEST/BUST CIRC	M			
	F	31.67	1.65 28.94 - 34.40	33.07
HIP CIRCUMFERENCE	M			
	F	35.63	1.80 32.66 - 38.61	37.16
NECK CIRCUMFERENCE	M			
	F	12.28	.48 11.48 - 13.08	12.62
SHOULDER CIRC	M			
	F	36.50	.86 35.47 - 37.92	37.99
VERTICAL TRUNK CIR	M			
	F	59.83	1.97 56.57 - 63.08	61.84
WAIST CIRC	M			
	F	24.95	1.96 21.72 - 28.19	26.30
WRIST CIRC	M			
	F	5.66	.21 5.31 - 6.01	5.81

TABLE 5
20 SIZE PROGRAM FOR THE UPPER BODY*
SMALL X-SHORT

THE RANGE FOR STATURE 57.00 - 60.99
THE RANGE FOR SHOULDER CIRCUMFER 38.00 - 40.99

MALES N = 5 TARIFF PERCENTAGE = .08%
FEMALES N = 58 TARIFF PERCENTAGE = 4.55%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	121.00	10.91 103.00 - 139.01	
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M			
	F	12.13	.47 11.35 - 12.91	12.59
SHOULDER HEIGHT	M			
	F	48.01	1.17 46.09 - 49.94	49.83
SLEEVE INSEAM	M			
	F	16.19	.77 14.93 - 17.46	16.79
STATURE	M			
	F	59.00	1.15 57.09 - 60.90	
WAIST BACK LENGTH	M			
	F	15.02	.92 13.50 - 16.54	15.45
WAIST HEIGHT	M			
	F	36.18	1.23 34.15 - 38.21	37.57
*** ARCS/BREADTHS ***				
CHEST BREADTH	M			
	F	11.12	.47 10.34 - 11.90	11.54
HIP BREADTH	M			
	F	13.48	.78 12.18 - 14.77	14.00
INTERSCYE BACK	M			
	F	14.77	.74 13.55 - 15.99	15.23
SHOULDER BREADTH	M			
	F	16.43	.44 15.70 - 17.16	17.03
SHOULDER LENGTH	M			
	F	5.65	.38 5.02 - 6.29	5.82

*UNITS ARE INCHES OR POUNDS.

TABLE 5 (cont'd)

20 SIZE UPPER BODY
SMALL X-SHORT

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M			
	F	14.52	.65 13.45 - 15.59	15.11
BICEPS CIRC/FLEXED	M			
	F	10.67	.63 9.63 - 11.72	11.14
CHEST/BUST CIRC	M			
	F	34.89	1.65 32.17 - 37.62	36.30
HIP CIRCUMFERENCE	M			
	F	36.59	1.80 33.62 - 39.57	38.12
NECK CIRCUMFERENCE	M			
	F	12.54	.48 11.74 - 13.34	12.87
SHOULDER CIRC	M			
	F	39.50	.86 38.07 - 40.92	40.99
VERTICAL TRUNK CIR	M			
	F	57.62	1.97 54.37 - 60.86	59.63
WAIST CIRC	M			
	F	28.17	1.96 24.93 - 31.40	29.52
WRIST CIRC	M			
	F	5.63	.21 5.28 - 5.98	5.78

TABLE 6
20 SIZE PROGRAM FOR THE UPPER BODY*
SMALL SHORT

THE RANGE FOR STATURE 51.00 - 64.39
THE RANGE FOR SHOULDER CIRCUMFER 38.00 - 40.99

MALES N = 81 TARIFF PERCENTAGE = 1.23%
FEMALES N = 357 TARIFF PERCENTAGE = 27.98%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	109.46	13.60	87.02 - 131.90
	F	129.53	10.91	111.53 - 147.54
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	13.25	.54	12.36 - 14.15
	F	12.97	.47	12.19 - 13.75
SHOULDER HEIGHT	M	51.40	1.27	49.30 - 53.50
	F	51.53	1.17	49.60 - 53.40
SLEEVE INSEAM	M	17.43	.80	16.12 - 18.75
	F	17.39	.77	16.12 - 18.66
STATURE	M	62.99	1.15	61.09 - 64.90
	F	63.00	1.15	61.09 - 64.90
WAIST BACK LENGTH	M	16.17	1.23	14.14 - 18.21
	F	15.84	.92	14.32 - 17.36
WAIST HEIGHT	M	38.06	1.39	35.76 - 40.36
	F	39.08	1.23	37.05 - 41.11
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	10.61	.56	9.69 - 11.53
	F	11.11	.47	10.34 - 11.89
HIP BREADTH	M	11.67	.58	10.71 - 12.63
	F	13.82	.78	12.53 - 15.11
INTERSCYE BACK	M	13.75	.98	12.13 - 15.37
	F	14.87	.74	13.65 - 16.09
SHOULDER BREADTH	M	15.99	.57	15.06 - 16.93
	F	16.52	.44	15.79 - 17.25
SHOULDER LENGTH	M	5.79	.75	4.55 - 7.02
	F	5.85	.38	5.22 - 6.46

*UNITS ARE INCHES OR POUNDS.

TABLE 6 (cont'd)

20 SIZE UPPER BODY
SMALL SHORT

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	15.64	.99	14.01 - 17.26
	F	14.71	.65	13.64 - 15.78
BICEPS CIRC/FLEXED	M	11.12	.73	9.92 - 12.33
	F	10.59	.63	9.55 - 11.64
CHEST/BUST CIRC	M	32.43	1.57	29.84 - 35.02
	F	34.75	1.65	32.02 - 37.47
HIP CIRCUMFERENCE	M	32.74	1.65	30.02 - 35.46
	F	37.36	1.80	34.38 - 40.33
NECK CIRCUMFERENCE	M	13.56	.65	12.49 - 14.63
	F	12.69	.48	11.89 - 13.49
SHOULDER CIRC	M	39.50	.86	38.07 - 40.92
	F	39.50	.86	38.07 - 40.92
VERTICAL TRUNK CIR	M	58.51	2.51	54.36 - 62.65
	F	59.89	1.97	56.64 - 63.15
WAIST CIRC	M	26.77	2.34	22.92 - 30.63
	F	27.98	1.96	24.75 - 31.22
WRIST CIRC	M	6.19	.28	5.72 - 6.66
	F	5.75	.21	5.40 - 6.10

TABLE 7
20 SIZE PROGRAM FOR THE UPPER BODY*
SMALL REGULAR

THE RANGE FOR STATURE 65.00 - 68.99
THE RANGE FOR SHOULDER CIRCUMFER 38.00 - 40.99

MALES N = 249 TARIFF PERCENTAGE = 3.78%
FEMALES N = 241 TARIFF PERCENTAGE = 18.89%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	118.89	13.60 96.45 - 141.33	
	F	135.07	10.91 120.06 - 156.07	
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	14.07	.54 13.17 - 14.96	14.50
	F	13.81	.47 13.03 - 14.55	
SHOULDER HEIGHT	M	54.97	1.27 52.87 - 57.07	56.77
	F	55.05	1.17 53.12 - 56.98	
SLEEVE INSEAM	M	18.62	.80 17.30 - 19.93	19.21
	F	18.59	.77 17.32 - 19.85	
STATURE	M	66.99	1.15 65.09 - 68.90	
	F	67.00	1.15 65.09 - 68.90	
WAIST BACK LENGTH	M	16.97	1.23 14.94 - 19.00	17.49
	F	16.67	.92 15.15 - 18.19	
WAIST HEIGHT	M	40.83	1.39 38.53 - 43.13	42.16
	F	41.98	1.23 39.94 - 44.01	
*** APCS/BREADTHS ***				
CHEST BREADTH	M	10.69	.56 9.76 - 11.61	
	F	11.11	.47 10.33 - 11.89	11.53
HIP BREADTH	M	11.99	.58 11.03 - 12.94	
	F	14.15	.78 12.87 - 15.45	14.68
INTERSCYE BACK	M	13.76	.98 12.14 - 15.38	14.25
	F	14.97	.74 13.75 - 16.19	
SHOULDER BREADTH	M	16.11	.57 15.17 - 17.04	16.67
	F	16.61	.44 15.87 - 17.34	
SHOULDER LENGTH	M	5.91	.75 4.67 - 7.14	6.09
	F	6.04	.38 5.41 - 6.67	

*UNITS ARE INCHES OR POUNDS.

TABLE 7 (cont'd)

20 SIZE UPPER BODY
SMALL REGULAR

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	15.79	.99	14.17 - 17.42
	F	14.90	.65	13.83 - 15.96
BICEPS CIRC/FLEXED	M	10.99	.73	9.79 - 12.20
	F	10.51	.63	9.47 - 11.56
CHEST/BUST CIRC	M	32.39	1.57	29.80 - 34.98
	F	34.60	1.65	31.87 - 37.32
HIP CIRCUMFERENCE	M	33.23	1.65	30.51 - 35.95
	F	38.13	1.80	35.15 - 41.10
NECK CIRCUMFERENCE	M	13.60	.65	12.53 - 14.67
	F	12.84	.48	12.04 - 13.64
SHOULDER CIRC	M	39.50	.86	38.07 - 40.92
	F	39.50	.86	38.07 - 40.92
VERTICAL TRUNK CIR	M	60.59	2.51	56.45 - 64.74
	F	62.16	1.97	58.91 - 65.42
WAIST CIRC	M	26.80	2.34	22.94 - 30.65
	F	27.80	1.96	24.56 - 31.03
WRIST CIRC	M	6.34	.28	5.87 - 6.81
	F	5.88	.21	5.53 - 6.23

TABLE 8
20 SIZE PROGRAM FOR THE UPPER BODY*
SMALL LONG

THE RANGE FOR STATURE 69.00 - 72.99
THE RANGE FOR SHOULDER CIRCUMFER 38.00 - 40.99

MALES N = 88 TARIFF PERCENTAGE = 1.33%
FEMALES N = 19 TARIFF PERCENTAGE = 1.49%

	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	128.31	13.60	105.87 - 150.75
	F	146.60	10.91	128.59 - 164.60
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	14.88	.54	13.98 - 15.77
	F	14.65	.47	13.87 - 15.43
SHOULDER HEIGHT	M	58.54	1.27	56.44 - 60.63
	F	58.57	1.17	56.64 - 60.50
SLEEVE INSEAM	M	19.80	.80	18.43 - 21.11
	F	19.79	.77	18.52 - 21.05
STATURE	M	70.99	1.15	69.09 - 72.90
	F	71.00	1.15	69.09 - 72.90
WAIST BACK LENGTH	M	17.76	1.23	15.73 - 19.79
	F	17.49	.92	15.97 - 19.01
WAIST HEIGHT	M	43.59	1.39	41.30 - 45.89
	F	44.87	1.23	42.84 - 46.91
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	10.76	.56	9.84 - 11.69
	F	11.10	.47	10.32 - 11.88
HIP BREADTH	M	12.30	.58	11.34 - 13.26
	F	14.50	.78	13.21 - 15.79
INTERSCYE BACK	M	13.77	.98	12.15 - 15.39
	F	15.07	.74	13.85 - 16.29
SHOULDER BREADTH	M	16.22	.57	15.28 - 17.15
	F	16.70	.44	15.96 - 17.43
SHOULDER LENGTH	M	6.03	.75	4.79 - 7.26
	F	6.24	.38	5.60 - 6.87
				6.21

*UNITS ARE INCHES OR POUNDS.

TABLE 8 (cont'd)

20 SIZE UPPER BODY
SMALL LONG

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	15.94	.99 14.32 - 17.57	16.52
	F	15.09	.65 14.02 - 16.15	
BICEPS CIRC/FLEXED	M	10.87	.73 9.66 - 12.07	11.32
	F	10.44	.63 9.39 - 11.48	
CHEST/BUST CIRC	M	32.35	1.57 29.76 - 34.95	
	F	34.45	1.65 31.72 - 37.18	35.85
HIP CIRCUMFERENCE	M	33.72	1.65 31.00 - 36.45	
	F	38.89	1.80 35.92 - 41.87	40.42
NECK CIRCUMFERENCE	M	13.64	.65 12.57 - 14.72	
	F	13.00	.48 12.20 - 13.80	13.99
SHOULDER CIRC	M	39.50	.86 38.07 - 40.92	
	F	39.50	.86 38.07 - 40.92	40.99
VERTICAL TRUNK CIR	M	62.68	2.51 58.54 - 66.83	
	F	64.43	1.97 61.18 - 67.69	66.45
WAIST CIRC	M	26.82	2.34 22.96 - 30.68	
	F	27.61	1.96 24.38 - 30.85	28.96
WRIST CIRC	M	6.49	.28 6.03 - 6.96	
	F	6.00	.21 5.65 - 6.35	6.56

TABLE 9
20 SIZE PROGRAM FOR THE UPPER BODY*
MEDIUM X-SHORT

THE RANGE FOR STATURE 58.00 - 61.99
THE RANGE FOR SHOULDER CIRCUMFER 41.00 - 43.99

MALES N = 16 TARIFF PERCENTAGE = .24%
FEMALES N = 28 TARIFF PERCENTAGE = 2.19%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	142.80	10.91 124.79 - 160.80	
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M			
	F	12.41	.47 11.64 - 13.19	12.87
SHOULDER HEIGHT	M			
	F	49.02	1.17 47.09 - 50.95	50.83
SLEEVE INSEAM	M			
	F	16.49	.77 15.22 - 17.75	17.08
STATURE	M			
	F	60.00	1.15 58.09 - 61.90	
WAIST BACK LENGTH	M			
	F	15.28	.92 13.76 - 16.79	15.71
WAIST HEIGHT	M			
	F	36.80	1.23 34.77 - 38.63	38.20
*** ARCS/BREADTHS ***				
CHEST BREADTH	M			
	F	11.97	.47 11.19 - 12.75	12.39
HIP BREADTH	M			
	F	14.27	.78 12.98 - 15.56	14.79
INTERSCYE BACK	M			
	F	15.61	.74 14.39 - 16.83	16.07
SHOULDER BREADTH	M			
	F	17.58	.44 16.85 - 18.31	18.19
SHOULDER LENGTH	M			
	F	5.83	.38 5.20 - 6.47	6.00

*UNITS ARE INCHES OR POUNDS.

TABLE 9 (cont'd)

20 SIZE UPPER BODY
MEDIUM X-SHORT

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M			
	F	15.56	.65 14.49 - 16.62	16.14
BICEPS CIRC/FLEXED	M			
	F	11.67	.63 10.62 - 12.71	12.13
CHEST/BUST CIRC	M			
	F	37.82	1.65 35.09 - 40.55	39.22
HIP CIRCUMFERENCE	M			
	F	39.09	1.80 36.11 - 42.06	40.62
NECK CIRCUMFERENCE	M			
	F	13.10	.48 12.30 - 13.90	13.44
SHOULDER CIRC	M			
	F	42.50	.56 41.07 - 43.92	43.99
VERTICAL TRUNK CIR	M			
	F	59.96	1.97 56.70 - 63.21	61.97
WAIST CIRC	M			
	F	31.01	1.96 27.78 - 34.25	32.36
WRIST CIRC	M			
	F	5.85	.21 5.50 - 6.20	6.00

TABLE 10
20 SIZE PROGRAM FOR THE UPPER BODY*
MEDIUM SHORT

THE RANGE FOR STATURE 62.00 - 65.99
THE RANGE FOR SHOULDER CIRCUMFER 41.00 - 43.99

MALES N = 408 TARIFF PERCENTAGE = 6.19%
FEMALES N = 167 TARIFF PERCENTAGE = 13.09%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	133.21	13.60	110.76 - 155.65
	F	151.33	10.91	133.32 - 169.33
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	13.52	.54	12.62 - 14.41
	F	13.25	.47	12.48 - 14.03
SHOULDER HEIGHT	M	52.34	1.27	50.25 - 54.44
	F	52.54	1.17	50.61 - 54.47
SLEEVE INSEAM	M	17.73	.80	16.42 - 19.04
	F	17.69	.77	16.42 - 18.95
STATURE	M	64.00	1.15	62.09 - 65.90
	F	64.00	1.15	62.09 - 65.90
WAIST BACK LENGTH	M	16.62	1.23	14.59 - 18.65
	F	16.10	.92	14.58 - 17.62
WAIST HEIGHT	M	38.66	1.39	36.37 - 40.96
	F	39.70	1.23	37.67 - 41.73
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	11.41	.56	10.49 - 12.33
	F	11.96	.47	11.18 - 12.74
HIP BREADTH	M	12.31	.58	11.35 - 13.27
	F	14.61	.78	13.32 - 15.90
INTERSCYE BACK	M	14.72	.98	13.10 - 16.34
	F	15.71	.74	14.49 - 16.93
SHOULDER BREADTH	M	17.03	.57	16.10 - 17.97
	F	17.67	.44	16.94 - 18.40
SHOULDER LENGTH	M	6.07	.75	4.83 - 7.30
	F	6.03	.38	5.40 - 6.66

*UNITS ARE INCHES OR POUNDS.

TABLE 10 (cont'd)

20 SIZE UPPER BODY
MEDIUM SHORT

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	16.68	.99	15.05 - 18.30
	F	15.74	.65	14.68 - 16.81
BICEPS CIRC/FLEXED	M	12.14	.73	10.93 - 13.34
	F	11.59	.63	10.54 - 12.63
CHEST/BUST CIRC	M	35.11	1.57	32.52 - 37.71
	F	37.67	1.65	34.95 - 40.40
HIP CIRCUMFERENCE	M	35.03	1.65	32.30 - 37.75
	F	39.85	1.60	36.88 - 42.83
NECK CIRCUMFERENCE	M	14.22	.65	13.15 - 15.29
	F	13.25	.48	12.46 - 14.05
SHOULDER CIRC	M	42.50	.86	41.07 - 43.92
	F	42.50	.86	41.07 - 43.92
VERTICAL TRUNK CIR	M	60.88	2.51	56.73 - 65.03
	F	62.23	1.97	58.97 - 65.48
WAIST CIRC	M	29.63	2.34	25.77 - 33.49
	F	30.83	1.96	27.59 - 34.06
WRIST CIRC	M	6.41	.26	5.94 - 6.88
	F	5.97	.21	5.62 - 6.32

TABLE 11
20 SIZE PROGRAM FOR THE UPPER BODY*
MEDIUM REGULAR

THE RANGE FOR STATURE 66.00 - 69.99
THE RANGE FOR SHOULDER CIRCUMFER 41.00 - 43.99

MALES N =1457 TARIFF PERCENTAGE = 22.10%
FEMALES N = 89 TARIFF PERCENTAGE = 6.97%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	142.63	13.60	120.19 - 165.07
	F	159.86	10.91	141.85 - 177.86
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	14.33	.54	13.43 - 15.23
	F	14.09	.47	13.32 - 14.87
SHOULDER HEIGHT	M	55.91	1.27	53.81 - 58.01
	F	56.05	1.17	54.13 - 57.98
SLEEVE INSEAM	M	18.92	.80	17.60 - 20.23
	F	18.88	.77	17.62 - 20.15
STATURE	M	68.00	1.15	66.09 - 69.90
	F	68.00	1.15	66.09 - 69.90
WAIST BACK LENGTH	M	17.42	1.23	15.39 - 19.45
	F	16.93	.92	15.41 - 18.45
WAIST HEIGHT	M	41.43	1.39	39.13 - 43.73
	F	42.60	1.23	40.57 - 44.63
*** AFCS/BREADTHS ***				
CHEST BREADTH	M	11.49	.56	10.56 - 12.41
	F	11.96	.47	11.18 - 12.73
HIP BREADTH	M	12.63	.58	11.67 - 13.59
	F	14.95	.78	13.66 - 16.24
INTERSCYE PACK	M	14.73	.98	13.11 - 16.35
	F	15.81	.74	14.59 - 17.03
SHOULDER BREADTH	M	17.15	.57	16.21 - 18.08
	F	17.76	.44	17.03 - 18.49
SHOULDER LENGTH	M	6.19	.75	4.95 - 7.42
	F	6.22	.38	5.59 - 6.86

* UNITS ARE INCHES OR POUNDS.

TABLE 11 (cont'd)

20 SIZE UPPER BODY
MEDIUM REGULAR

	SEX	MID-SIZE SZ-SO VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	16.83	.99 15.20 - 18.46	17.40
	F	15.93	.65 14.87 - 17.00	
BICEPS CIRC/FLEXED	M	12.01	.73 10.80 - 13.21	12.47
	F	11.51	.63 10.46 - 12.55	
CHEST/BUST CIRC	M	35.07	1.57 32.48 - 37.67	
	F	37.53	1.65 34.80 - 40.25	38.93
HIP CIRCUMFERENCE	M	35.52	1.65 32.80 - 38.24	
	F	40.62	1.80 37.65 - 43.59	42.15
NECK CIRCUMFERENCE	M	14.26	.65 13.19 - 15.34	
	F	13.41	.48 12.61 - 14.21	14.61
SHOULDER CIRC	M	42.50	.86 41.07 - 43.92	43.49
	F	42.50	.86 41.07 - 43.92	
VER CAL TRUNK CIR	M	62.97	2.51 58.82 - 67.11	
	F	64.50	1.97 61.24 - 67.75	66.51
WAIST CIRC	M	29.65	2.34 25.79 - 33.51	
	F	30.64	1.96 27.41 - 33.88	31.99
WRIST CIRC	M	6.56	.28 6.09 - 7.03	
	F	6.10	.21 5.75 - 6.45	6.73

TABLE 12
20 SIZE PROGRAM FOR THE UPPER BODY*
MEDIUM LONG

THE RANGE FOR STATURE 70.00 - 73.99
THE RANGE FOR SHOULDER CIRCUMFER 41.00 - 43.99

MALES N = 533 TARIFF PERCENTAGE = .08%
FEMALES N = 9 TARIFF PERCENTAGE = .71%

	SEX	MID-SIZE SZ-SG VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	152.05	13.50 129.61 - 174.50	
	F	168.39	10.91 150.39 - 186.40	
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	15.14	.54 14.25 - 16.04	15.58
	F	14.93	.47 14.16 - 15.71	
SHOULDER HEIGHT	M	59.48	1.27 57.38 - 61.58	61.28
	F	59.57	1.17 57.64 - 61.50	
SLEEVE INSEAM	M	20.10	.80 18.79 - 21.41	20.69
	F	20.08	.77 18.81 - 21.35	
STATURE	M	71.99	1.15 70.09 - 73.90	
	F	72.00	1.15 70.09 - 73.90	
WAIST BACK LENGTH	M	18.21	1.23 16.18 - 20.24	18.73
	F	17.75	.92 16.23 - 19.27	
WAIST HEIGHT	M	44.20	1.39 41.90 - 46.49	45.53
	F	45.50	1.23 43.47 - 47.53	
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	11.56	.56 10.64 - 12.49	
	F	11.95	.47 11.17 - 12.73	12.37
HIP BREADTH	M	12.94	.58 11.99 - 13.90	
	F	15.29	.78 14.00 - 16.58	15.81
INTERSCYE BACK	M	14.74	.98 13.12 - 16.36	15.22
	F	15.91	.74 14.69 - 17.13	
SHOULDER BREADTH	M	17.26	.57 16.32 - 18.19	17.82
	F	17.85	.44 17.12 - 18.58	
SHOULDER LENGTH	M	6.31	.75 5.07 - 7.54	6.49
	F	6.42	.38 5.79 - 7.05	

*UNITS ARE INCHES OR POUNDS.

TABLE 12 (cont'd)

20 SIZE UPPER BODY
MEDIUM LONG

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	16.98	.99	15.36 - 18.61
	F	16.12	.65	15.06 - 17.19
BICEPS CIRC/FLEXED	M	11.88	.73	10.68 - 13.08
	F	11.43	.63	10.38 - 12.47
CHEST/BUST CIRC	M	35.04	1.57	32.44 - 37.63
	F	37.38	1.65	34.65 - 40.10
HIP CIRCUMFERENCE	M	36.01	1.65	33.29 - 38.73
	F	41.39	1.80	38.41 - 44.36
NECK CIRCUMFERENCE	M	14.31	.65	13.23 - 15.38
	F	13.56	.48	12.76 - 14.36
SHOULDER CIRC	M	42.50	.86	41.07 - 43.92
	F	42.50	.86	41.07 - 43.92
VERTICAL TRUNK CIR	M	65.06	2.51	60.91 - 69.20
	F	66.77	1.97	63.51 - 70.02
WAIST CIRC	M	29.67	2.34	25.81 - 33.53
	F	30.46	1.96	27.22 - 33.69
WRIST CIRC	M	6.72	.28	6.25 - 7.19
	F	6.22	.21	5.87 - 6.57

TABLE 13
20 SIZE PROGRAM FOR THE UPPER BODY*
LARGE SHORT

THE RANGE FOR STATURE 62.00 - 65.99
THE RANGE FOR SHOULDER CIRCUMFER 44.00 - 46.99

MALES N = 308 TARIFF PERCENTAGE = 4.67%
FEMALES N = 7 TARIFF PERCENTAGE = .55%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	154.59	13.60 132.15 - 177.03	
	F	170.99	10.91 152.98 - 188.99	
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	13.58	.54 12.68 - 14.48	14.01
	F	13.33	.47 12.55 - 14.10	
SHOULDER HEIGHT	M	52.39	1.27 50.30 - 54.49	54.20
	F	52.66	1.17 50.73 - 54.59	
SLEEVE INSEAM	M	17.74	.80 16.42 - 19.05	18.33
	F	17.68	.77 16.41 - 18.95	
STATURE	M	64.00	1.15 62.09 - 65.90	
	F	64.00	1.15 62.09 - 65.90	
WAIST BACK LENGTH	M	16.87	1.23 14.84 - 18.90	17.39
	F	16.15	.92 14.63 - 17.67	
WAIST HEIGHT	M	38.58	1.39 36.28 - 40.87	39.91
	F	39.60	1.23 37.57 - 41.63	
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	12.19	.56 11.27 - 13.12	
	F	12.81	.47 12.03 - 13.59	13.23
HIP BREADTH	M	12.87	.58 11.92 - 13.83	
	F	15.31	.78 14.02 - 16.61	15.84
INTERSCYE BACK	M	15.68	.98 14.07 - 17.30	16.17
	F	16.53	.74 15.31 - 17.75	
SHOULDER BREADTH	M	18.05	.57 17.11 - 18.98	18.61
	F	18.80	.44 18.06 - 19.53	
SHOULDER LENGTH	M	6.31	.75 5.08 - 7.55	6.50
	F	6.16	.38 5.53 - 6.79	

*UNITS ARE INCHES OR POUNDS.

TABLE 13 (cont'd)

20 SIZE UPPER BODY
LARGE SHORT

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	17.68	.99	16.05 - 19.30
	F	16.73	.65	15.67 - 17.80
BICEPS CIRC/FLEXED	M	13.18	.73	11.98 - 14.39
	F	12.60	.63	11.56 - 13.64
CHEST/BUST CIRC	M	37.81	1.57	35.21 - 40.40
	F	40.64	1.65	37.91 - 43.37
HIP CIRCUMFERENCE	M	37.19	1.65	34.47 - 39.91
	F	42.16	1.80	39.18 - 45.13
NECK CIRCUMFERENCE	M	14.87	.65	13.80 - 15.94
	F	13.78	.48	12.98 - 14.58
SHOULDER CIRC	M	45.50	.86	44.07 - 46.92
	F	45.50	.86	44.07 - 46.92
VERTICAL TRUNK CIR	M	62.73	2.51	58.58 - 66.88
	F	63.99	1.97	60.74 - 67.25
WAIST CIRC	M	32.48	2.34	28.62 - 36.34
	F	33.72	1.96	30.48 - 36.95
WRIST CIRC	M	6.59	.28	6.12 - 7.06
	F	6.16	.21	5.81 - 6.51

TABLE 14
20 SIZE PROGRAM FOR THE UPPER BODY*
LARGE REGULAR

THE RANGE FOR STATURE 66.00 - 69.99
THE RANGE FOR SHOULDER CIRCUMFER 44.00 - 46.99

MALES N =1519 TARIFF PERCENTAGE = 23.04%
FEMALES N = 9 TARIFF PERCENTAGE = .71%

	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	164.02	13.60 141.57 - 186.46	
	F	179.52	10.91 161.51 - 197.52	
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	14.39	.54 13.49 - 15.29	14.83
	F	14.17	.47 13.39 - 14.94	
SHOULDER HEIGHT	M	55.96	1.27 53.87 - 58.06	57.77
	F	56.18	1.17 54.25 - 58.11	
SLEEVE INSEAM	M	18.92	.80 17.61 - 20.23	19.51
	F	18.88	.77 17.61 - 20.14	
STATURE	M	68.00	1.15 66.09 - 69.90	
	F	68.00	1.15 66.09 - 69.90	
WAIST BACK LENGTH	M	17.67	1.23 15.63 - 19.70	18.19
	F	16.98	.92 15.46 - 18.50	
WAIST HEIGHT	M	41.34	1.39 39.04 - 43.64	42.68
	F	42.50	1.23 40.47 - 44.53	
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	12.27	.56 11.34 - 13.19	
	F	12.80	.47 12.03 - 13.58	13.22
HIP BREADTH	M	13.19	.58 12.23 - 14.15	
	F	15.65	.78 14.36 - 16.95	16.18
INTERSCYE BACK	M	15.69	.98 14.07 - 17.71	16.18
	F	16.63	.74 15.41 - 17.85	
SHOULDER BREADTH	M	18.16	.57 17.22 - 19.09	18.72
	F	18.89	.44 18.15 - 19.62	
SHOULDER LENGTH	M	6.43	.75 5.20 - 7.67	6.62
	F	6.36	.38 5.72 - 6.99	

*UNITS ARE INCHES OR POUNDS.

TABLE 14 (cont'd)

20 SIZE UPPER BODY
LARGE REGULAR

		SEX	MID-SIZE SZ-SO VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***					
ARM CIRC AT SCYE	M	17.83	.99	16.20 - 19.46	18.41
	F	16.92	.65	15.86 - 17.99	
BICEPS CIRC/FLEXED	M	13.05	.73	11.85 - 14.26	13.51
	F	12.52	.63	11.48 - 13.56	
CHEST/BUST CIRC	M	37.77	1.57	35.18 - 40.36	
	F	40.49	1.65	37.76 - 43.22	41.89
HIP CIRCUMFERENCE	M	37.68	1.65	34.96 - 40.40	
	F	42.92	1.80	39.95 - 45.90	44.45
NECK CIRCUMFERENCE	M	14.91	.65	13.84 - 15.99	
	F	13.94	.48	13.14 - 14.73	15.26
SHOULDER CIRC	M	45.50	.86	44.07 - 46.92	
	F	45.50	.86	44.07 - 46.92	46.99
VERTICAL TRUNK CIR	M	64.82	2.51	60.67 - 68.97	
	F	66.26	1.97	63.01 - 69.52	68.28
WAIST CIRC	M	32.50	2.34	28.64 - 36.36	
	F	33.53	1.96	30.30 - 36.77	34.88
WRIST CIRC	M	6.75	.28	6.28 - 7.22	
	F	6.29	.21	5.94 - 6.64	6.91

TABLE 15
20 SIZE PROGRAM FOR THE UPPER BODY*
LARGE LONG

THE RANGE FOR STATURE 70.00 - 73.99
THE RANGE FOR SHOULDER CIRCUMFER 44.00 - 46.99

MALES N = 849 TARIFF PERCENTAGE = 12.88%
FEMALES N = 2 TARIFF PERCENTAGE = .16%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	173.46	13.60	151.00 - 195.88
	F			
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	15.20	.54	14.31 - 16.10
	F			15.64
SHOULDER HEIGHT	M	59.53	1.27	57.43 - 61.63
	F			61.33
SLEEVE INSEAM	M	20.10	.80	18.79 - 21.42
	F			20.70
STATURE	M	71.99	1.15	70.09 - 73.90
	F			
WAIST BACK LENGTH	M	18.46	1.23	16.43 - 20.49
	F			18.98
WAIST HEIGHT	M	44.11	1.39	41.81 - 46.40
	F			45.44
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	12.35	.56	11.42 - 13.27
	F			12.77
HIP BREADTH	M	13.51	.58	12.55 - 14.47
	F			13.94
INTERSCYE BACK	M	15.70	.98	14.08 - 17.32
	F			16.19
SHOULDER BREADTH	M	18.27	.57	17.34 - 19.20
	F			18.83
SHOULDER LENGTH	M	6.55	.75	5.32 - 7.79
	F			6.74

*UNITS ARE INCHES OR POUNDS.

TABLE 15 (cont'd)

20 SIZE UPPER BODY
LARGE LONG

*** CIRCUMFERENCES ***	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
ARM CIRC AT SCYE	M	17.98	.99	16.36 - 19.61
	F			18.56
BICEPS CIRC/FLEXED	M	12.93	.73	11.72 - 14.13
	F			13.38
CHEST/BUST CIRC	M	37.73	1.57	35.14 - 40.32
	F			39.05
HIP CIRCUMFERENCE	M	38.18	1.65	35.45 - 40.90
	F			39.50
NECK CIRCUMFERENCE	M	14.96	.65	13.89 - 16.03
	F			15.30
SHOULDER CIRC	M	45.50	.86	44.07 - 46.92
	F			46.99
VERTICAL TRUNK CIR	M	65.91	2.51	62.76 - 71.05
	F			68.87
WAIST CIRC	M	32.52	2.34	28.66 - 36.38
	F			33.95
WRIST CIRC	M	6.90	.28	6.43 - 7.37
	F			7.07

TABLE 16
20 SIZE PROGRAM FOR THE UPPER BODY*
LARGE X-LONG

THE RANGE FOR STATURE 74.00 - 77.99
THE RANGE FOR SHOULDER CIRCUMFER. 44.00 - 46.99

MALES N = 68 TARIFF PERCENTAGE = 1.03%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	182.87	13.60	160.42 - 205.31
	F			
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	16.02	.54	15.12 - 16.91
	F			16.45
SHOULDER HEIGHT	M	63.10	1.27	61.00 - 65.19
	F			64.90
SLEEVE INSEAM	M	21.29	.60	19.98 - 22.60
	F			21.88
STATURE	M	75.99	1.15	74.09 - 77.90
	F			
WAIST BACK LENGTH	M	19.26	1.23	17.22 - 21.29
	F			19.78
WAIST HEIGHT	M	46.87	1.39	44.58 - 49.17
	F			48.21
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	12.42	.56	11.50 - 13.35
	F			12.85
HIP BREADTH	M	13.82	.58	12.86 - 14.78
	F			14.26
INTERSCYE BACK	M	15.71	.98	14.09 - 17.33
	F			16.20
SHOULDER BREADTH	M	18.38	.57	17.45 - 19.32
	F			18.94
SHOULDER LENGTH	M	6.68	.75	5.44 - 7.91
	F			6.86

*UNITS ARE INCHES OR POUNDS.

TABLE 16 (cont'd)

20 SIZE UPPER BODY
LARGE X-LONG

		SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***					
ARM CIRC AT SCYE	M	18.14	.99	16.51 - 19.76	18.71
	F				
BICEPS CIRC/FLEXED	M	12.80	.73	11.59 - 14.00	13.25
	F				
CHEST/BUST CIRC	M	37.69	1.57	35.10 - 40.28	39.01
	F				
HIP CIRCUMFERENCE	M	38.67	1.65	35.95 - 41.39	39.99
	F				
NECK CIRCUMFERENCE	M	15.00	.65	13.93 - 16.07	15.35
	F				
SHOULDER CIRC	M	45.50	.86	44.07 - 46.92	46.99
	F				
VERTICAL TRUNK CIR	M	69.00	2.51	64.85 - 73.14	70.96
	F				
WAIST CIRC	M	32.54	2.34	28.68 - 36.40	33.97
	F				
WRIST CIRC	M	7.05	.28	6.58 - 7.52	7.22
	F				

TABLE 17
20 SIZE PROGRAM FOR THE UPPER BODY*
X-LARGE REGULAR

THE RANGE FOR STATURE 65.00 - 68.99
THE RANGE FOR SHOULDER CIRCUMFER 47.00 - 49.99

MALES N = 311 TARIFF PERCENTAGE = 4.72%
FEMALES N = 3 TARIFF PERCENTAGE = .24%

WEIGHT		SEX	MID-SIZE SZ-SD	RANGE TO BE ACCOMODATED	RECOM-MENDED VALUE
			VALUE		
*** HEIGHTS/LENGTHS ***					
SHOULDER-ELBOW LTH		M	183.05	13.60	160.60 - 205.49
		F			
SHOULDER HEIGHT		M	55.12	.54	13.35 - 15.15
		F			14.68
SLEEVE INSEAM		M	18.63	1.27	53.02 - 57.22
		F			56.93
STATURE		M	66.99	1.15	65.09 - 68.90
		F			
WAIST BACK LENGTH		M	17.72	1.23	15.69 - 19.75
		F			18.24
WAIST HEIGHT		M	40.56	1.39	38.26 - 42.86
		F			41.90
*** ARCS/BREADTHS ***					
CHEST BREADTH		M	13.03	.56	12.11 - 13.95
		F			13.46
HIP BREADTH		M	13.67	.58	12.72 - 14.63
		F			14.11
INTERSCYE BACK		M	16.66	.98	15.04 - 18.28
		F			17.14
SHOULDER BREADTH		M	19.14	.57	18.21 - 20.08
		F			19.70
SHOULDER LENGTH		M	6.65	.75	5.42 - 7.89
		F			6.84

*UNITS ARE INCHES OR POUNDS.

TABLE 17 (cont'd)

20 SIZE UPPER BODY
X-LARGE REGULAR

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	18.79	.99	17.17 - 20.42
	F			19.37
BICEPS CIRC/FLEXED	M	14.13	.73	12.93 - 15.34
	F			14.59
CHEST/BUST CIRC	M	40.47	1.57	37.83 - 43.06
	F			41.79
HIP CIRCUMFERENCE	M	39.72	1.65	37.00 - 42.44
	F			41.05
NECK CIRCUMFERENCE	M	15.56	.65	14.48 - 16.63
	F			15.90
SHOULDER CIRC	M	48.50	.86	47.07 - 49.92
	F			49.99
VERTICAL TRUNK CIR	M	66.15	2.51	62.00 - 70.29
	F			68.11
WAIST CIRC	M	35.34	2.34	31.48 - 39.20
	F			36.77
WRIST CIRC	M	6.89	.28	6.42 - 7.36
	F			7.06

TABLE 18
20 SIZE PROGRAM FOR THE UPPER BODY*
X-LARGE LONG

THE RANGE FOR STATURE 69.00 - 72.99
THE RANGE FOR SHOULDER CIRCUMFER 47.00 - 49.99

MALES N = 469 TARIFF PERCENTAGE = 7.11%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	192.47	13.60 170.03 - 214.91	
	F			
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	15.06	.54 14.16 - 15.96	15.50
	F			
SHOULDER HEIGHT	M	58.69	1.27 56.59 - 60.78	60.49
	F			
SLEEVE INSEAM	M	19.81	.80 18.50 - 21.12	20.40
	F			
STATURE	M	70.99	1.15 69.09 - 72.90	
	F			
WAIST BACK LENGTH	M	18.51	1.23 16.48 - 20.54	19.03
	F			
WAIST HEIGHT	M	43.33	1.39 41.03 - 45.62	44.66
	F			
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	13.11	.56 12.18 - 14.03	13.54
	F			
HIP BREADTH	M	13.99	.58 13.03 - 14.95	14.43
	F			
INTERSCYE BACK	M	16.66	.98 15.05 - 18.28	17.15
	F			
SHOULDER BREADTH	M	19.25	.57 18.32 - 20.19	19.82
	F			
SHOULDER LENGTH	M	6.77	.75 5.54 - 8.01	6.96
	F			

*UNITS ARE INCHES OR POUNDS.

TABLE 18 (cont'd)

20 SIZE UPPER BODY
X-LARGE LONG

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	18.95	.99	17.32 - 20.57
	F			19.52
BICEPS CIRC/FLEXED	M	14.00	.73	12.80 - 15.21
	F			14.46
CHEST/BUST CIRC	M	40.43	1.57	37.84 - 43.03
	F			41.76
HIP CIRCUMFERENCE	M	40.22	1.65	37.49 - 42.94
	F			41.54
NECK CIRCUMFERENCE	M	15.60	.65	14.53 - 16.67
	F			15.94
SHOULDER CIRC	M	48.50	.86	47.07 - 49.92
	F			49.99
VERTICAL TRUNK CIR	M	68.24	2.51	64.09 - 72.38
	F			70.20
WAIST CIRC	M	35.36	2.34	31.50 - 39.22
	F			36.79
WRIST CIRC	M	7.04	.28	6.57 - 7.51
	F			7.21

TABLE 19
20 SIZE PROGRAM FOR THE UPPER BODY*
X-LARGE X-LONG

THE RANGE FOR STATURE 73.00 - 76.99
THE RANGE FOR SHOULDER CIRCUMFER 47.00 - 49.99

MALES N = 86 TARIFF PERCENTAGE = 1.30%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	201.90	13.60 179.45 - 224.34	
	F			
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	15.87	.54 14.98 - 16.77	16.31
	F			
SHOULDER HEIGHT	M	62.26	1.27 60.16 - 64.35	64.06
	F			
SLEEVE INSEAM	M	21.00	.80 19.68 - 22.31	21.59
	F			
STATURE	M	75.00	1.15 73.09 - 76.90	
	F			
WAIST BACK LENGTH	M	19.31	1.23 17.27 - 21.34	19.83
	F			
WAIST HEIGHT	M	46.09	1.39 43.80 - 48.39	47.43
	F			
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	13.18	.56 12.26 - 14.11	13.61
	F			
HIP BREADTH	M	14.31	.58 13.35 - 15.26	14.74
	F			
INTERSCYE BACK	M	16.67	.98 15.05 - 18.29	17.16
	F			
SHOULDER BREADTH	M	19.37	.57 18.43 - 20.30	19.93
	F			
SHOULDER LENGTH	M	6.89	.75 5.66 - 8.13	7.08
	F			

*UNITS ARE INCHES OR POUNDS.

TABLE 19 (cont'd)

20 SIZE UPPER BODY
X-LARGE X-LONG

*** CIRCUMFERENCES ***	SEX	MID-SIZE SZ-50 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
ARM CIRC AT SCYE	M	19.10	.99	17.47 - 20.72
	F			19.67
BICEPS CIRC/FLEXED	M	13.87	.73	12.67 - 15.08
	F			14.33
CHEST/BUST CIRC	M	40.39	1.57	37.80 - 42.99
	F			41.72
HIP CIRCUMFERENCE	M	40.71	1.65	37.99 - 43.43
	F			42.03
NECK CIRCUMFERENCE	M	15.64	.65	14.57 - 16.71
	F			15.49
SHOULDER CIRC	M	48.50	.86	47.07 - 49.92
	F			49.99
VERTICAL TRUNK CIR	M	70.32	2.51	66.18 - 74.47
	F			72.29
WAIST CIRC	M	35.38	2.34	31.53 - 39.24
	F			36.81
WRIST CIRC	M	7.20	.28	6.73 - 7.67
	F			7.37

TABLE 20
20 SIZE PROGRAM FOR THE UPPER BODY*
XX-LARGE REGULAR

THE RANGE FOR STATURE 65.00 - 68.99
THE RANGE FOR SHOULDER CIRCUMFER 50.00 - 52.99

MALES N = 38 TARIFF PERCENTAGE = .58%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	204.43	13.60 181.99 - 226.87	
	F			
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	14.31	.54 13.41 - 15.21	14.74
	F			
SHOULDER HEIGHT	M	55.17	1.27 53.08 - 57.27	56.98
	F			
SLEEVE INSEAM	M	18.63	.80 17.32 - 19.94	19.22
	F			
STATURE	M	66.99	1.15 65.09 - 68.90	
	F			
WAIST BACK LENGTH	M	17.97	1.23 15.94 - 20.00	18.49
	F			
WAIST HEIGHT	M	40.47	1.39 38.17 - 42.77	41.81
	F			
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	13.81	.56 12.89 - 14.74	14.24
	F			
HIP BREADTH	M	14.24	.58 13.28 - 15.20	14.67
	F			
INTERSCYE BACK	M	17.62	.98 16.00 - 19.24	18.11
	F			
SHOULDER BREADTH	M	20.16	.57 19.22 - 21.09	20.72
	F			
SHOULDER LENGTH	M	6.90	.75 5.67 - 8.13	7.09
	F			

*UNITS ARE INCHES OR POUNDS.

TABLE 20 (cont'd)

20 SIZE UPPER BODY
XX-LARGE REGULAR

*** CIRCUMFERENCES ***	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
ARM CIRC AT SCYE	M	19.79	.99	18.17 - 21.42
	F			20.37
BICEPS CIRC/FLEXED	M	15.18	.73	13.98 - 16.38
	F			15.54
CHEST/BUST CIRC	M	43.16	1.57	40.57 - 45.76
	F			44.49
HIP CIRCUMFERENCE	M	41.89	1.65	39.16 - 44.61
	F			43.21
NECK CIRCUMFERENCE	M	16.21	.65	15.13 - 17.28
	F			16.55
SHOULDER CIRC	M	51.50	.86	50.07 - 52.92
	F			52.99
VERTICAL TRUNK CIR	M	68.00	2.51	63.85 - 72.15
	F			69.96
WAIST CIRC	M	38.19	2.34	34.33 - 42.05
	F			39.62
WRIST CIRC	M	7.07	.28	6.60 - 7.54
	F			7.24

TABLE 21
20 SIZE PROGRAM FOR THE UPPER BODY*
XX-LARGE LONG

THE RANGE FOR STATURE 59.00 - 72.99
THE RANGE FOR SHOULDER CIRCUMFER 50.00 - 52.99

MALES N = 78 TARIFF PERCENTAGE = 1.18%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

WEIGHT	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
	M	213.86	13.60	191.42 - 236.30
	F			
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	15.12	.54	14.23 - 16.02
	F			15.56
SHOULDER HEIGHT	M	58.74	1.27	56.64 - 60.84
	F			60.54
SLEEVE INSEAM	M	19.81	.80	18.50 - 21.13
	F			20.41
STATURE	M	70.99	1.15	69.09 - 72.90
	F			
WAIST BACK LENGTH	M	18.76	1.23	16.73 - 20.79
	F			19.28
WAIST HEIGHT	M	43.24	1.39	40.94 - 45.54
	F			44.57
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	13.89	.56	12.96 - 14.81
	F			14.32
HIP BREADTH	M	14.55	.58	13.59 - 15.51
	F			14.99
INTERSCYE BACK	M	17.63	.98	16.01 - 19.25
	F			18.12
SHOULDER BREADTH	M	20.27	.57	19.33 - 21.20
	F			20.83
SHOULDER LENGTH	M	7.02	.75	5.79 - 8.25
	F			7.21

*UNITS ARE INCHES OR POUNDS.

TABLE 21 (cont'd)

20 SIZE UPPER BODY
XX-LARGE LONG

	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
*** CIRCUMFERENCES ***				
ARM CIRC AT SCYE	M	19.95	.99	18.32 - 21.57
	F			20.52
BICEPS CIRC/FLEXED	M	15.05	.73	13.85 - 16.25
	F			15.51
CHEST/BUST CIRC	M	43.13	1.57	40.53 - 45.72
	F			44.45
HIP CIRCUMFERENCE	M	42.38	1.65	39.66 - 45.10
	F			43.70
NECK CIRCUMFERENCE	M	16.25	.65	15.18 - 17.32
	F			16.60
SHOULDER CIRC	M	51.50	.86	50.07 - 52.92
	F			52.99
VERTICAL TRUNK CIR	M	70.09	2.51	65.94 - 74.23
	F			72.05
WAIST CIRC	M	38.21	2.34	34.35 - 42.07
	F			39.64
WRIST CIRC	M	7.23	.28	6.76 - 7.70
	F			7.40

TABLE 22

20 SIZE PROGRAM FOR THE UPPER BODY*
XX-LARGE X-LONGTHE RANGE FOR STATURE 73.00 - 76.99
THE RANGE FOR SHOULDER CIRCUMFER 50.00 - 52.99MALES N = 24 TARIFF PERCENTAGE = .36%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	223.28	13.60 200.84 - 245.72	
	F			
*** HEIGHTS/LENGTHS ***				
SHOULDER-ELBOW LTH	M	15.93	.54 15.04 - 16.83	16.37
	F			
SHOULDER HEIGHT	M	62.31	1.27 60.21 - 64.40	64.11
	F			
SLEEVE INSEAM	M	21.00	.80 19.69 - 22.31	21.59
	F			
STATURE	M	75.00	1.15 73.09 - 76.90	
	F			
WAIST BACK LENGTH	M	19.56	1.23 17.52 - 21.59	20.08
	F			
WAIST HEIGHT	M	46.00	1.39 43.71 - 48.30	47.34
	F			
*** ARCS/BREADTHS ***				
CHEST BREADTH	M	13.97	.56 13.04 - 14.89	14.39
	F			
HIP BREADTH	M	14.87	.58 13.91 - 15.83	15.31
	F			
INTERSCYE BACK	M	17.64	.98 16.02 - 19.26	18.12
	F			
SHOULDER BREADTH	M	20.38	.57 19.44 - 21.31	20.94
	F			
SHOULDER LENGTH	M	7.14	.75 5.91 - 8.38	7.33
	F			

*UNITS ARE INCHES OR POUNDS.

TABLE 22 (cont'd)

20 SIZE UPPER BODY
XX-LARGE X-LONG

*** CIRCUMFERENCES ***	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
ARM CIRC AT SCYE	M F	20.10 .99	18.47 - 21.72	20.67
BICEPS CIRC/FLEXED	M F	14.92 .73	13.72 - 16.12	15.38
CHEST/BUST CIRC	M F	43.09 1.57	40.49 - 45.68	44.41
HIP CIRCUMFERENCE	M F	42.87 1.65	40.15 - 45.60	44.20
NECK CIRCUMFERENCE	M F	16.29 .65	15.22 - 17.37	16.54
SHOULDER CIRC	M F	51.50 .66	50.07 - 52.92	52.99
VERTICAL TRUNK CIR	M F	72.18 2.51	68.03 - 76.32	74.14
WAIST CIRC	M F	38.23 2.34	34.37 - 42.09	39.66
WRIST CIRC	M F	7.38 .28	6.91 - 7.85	7.55

TABLE 23
LOWER BODY PROGRAM BIVARIATE
WITH SIZE CATEGORIES*
(1966 Army Men / 1977 Army Women)

HIP CIRCUMF.	CROTCH HEIGHT (IN.)	TOTAL									
		21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	31.0
23.0	17	/	/	/	/	/	/	/	/	/	17
22.0	17	/	/	/	/	/	/	/	/	/	17
21.0	17	/	/	/	/	/	/	/	/	/	17
20.0	17	/	/	/	/	/	/	/	/	/	17
19.0	17	/	/	/	/	/	/	/	/	/	17
46.0	17	/	/	/	/	/	/	/	/	/	17
45.0	17	/	/	/	/	/	/	/	/	/	17
44.0	17	/	/	/	/	/	/	/	/	/	17
43.0	17	/	/	/	/	/	/	/	/	/	17
42.0	17	/	/	/	/	/	/	/	/	/	17
41.0	17	/	/	/	/	/	/	/	/	/	17
40.0	17	/	/	/	/	/	/	/	/	/	17
39.0	17	/	/	/	/	/	/	/	/	/	17
38.0	17	/	/	/	/	/	/	/	/	/	17
37.0	17	/	/	/	/	/	/	/	/	/	17
36.0	17	/	/	/	/	/	/	/	/	/	17
35.0	17	/	/	/	/	/	/	/	/	/	17
34.0	17	/	/	/	/	/	/	/	/	/	17
33.0	17	/	/	/	/	/	/	/	/	/	17
32.0	17	/	/	/	/	/	/	/	/	/	17
31.0	17	/	/	/	/	/	/	/	/	/	17
30.0	17	/	/	/	/	/	/	/	/	/	17
TOTAL	1	1	1	1	1	1	1	1	1	1	1

* Slash-marked categories are those which are integrated.

TABLE 24

LOWER BODY PROGRAM
SIZE CATEGORIES AND TARIFF

<u>Size</u>	<u>Hip Circ</u>	<u>Crotch Ht</u>	Tariff per Thousand		
			<u>Males</u>	<u>Females</u>	
Small Short	32.00-34.99	25.00-27.99	0	26	
Small Regular	32.00-34.99	28.00-30.99	32	79	
Small Long	32.00-34.99	31.00-33.99	115	19	
Small X-Long	32.00-34.99	34.00-36.99	40	0	
Medium Short	35.00-37.99	24.00-26.99	0	15	
Medium Regular	35.00-37.99	27.00-29.99	19	240	
Medium Long	35.00-37.99	30.00-32.99	220	189	
Medium X-Long	35.00-37.99	33.00-35.99	231	18	
Medium XX-Long	35.00-37.99	36.00-38.99	26	0	
Large Short	38.00-40.99	26.00-28.99	0	69	
Large Regular	38.00-40.99	29.00-31.99	61	205	
Large Long	38.00-40.99	32.00-34.99	148	68	
Large X-Long	38.00-40.99	35.00-37.99	44	0	
X-Large Short	41.00-43.99	26.00-28.99	0	14	
X-Large Regular	41.00-43.99	29.00-31.99	13	38	
X-Large Long	41.00-43.99	32.00-34.99	33	15	
X-Large X-Long	41.00-43.99	35.00-37.99	11	0	
XX-Large Regular	44.00-46.99	29.00-31.99	0	5	
XX-Large Long	44.00-46.99	32.00-34.99	5	0	
XX-Large X-Long	44.00-46.99	35.00-37.99	2	0	
			1,000	1,000	

Theoretical coverage of the male population = 98.3%
Theoretical coverage of the female population = 98.5%

TABLE 25
20 SIZE PROGRAM FOR THE LOWER BODY*
SMALL SHORT

THE RANGE FOR CROTCH HEIGHT 25.00 - 27.99
THE RANGE FOR HIP CIRCUMFERENCE 32.00 - 34.99

MALES N = 6 TARIFF PERCENTAGE = .09%
FEMALES N = 34 TARIFF PERCENTAGE = 2.58%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	98.63	9.41	83.10 - 114.17
*** HEIGHTS ***				
CALF HEIGHT	M			
	F	11.14	.61	10.14 - 12.15
CROTCH HEIGHT	M			
	F	26.50	.87	25.07 - 27.93
KNEECAP HEIGHT	M			
	F	16.81	.63	15.73 - 17.84
STATURE	M			
	F	59.00	1.60	56.36 - 61.64
WAIST HEIGHT	M			
	F	35.92	1.29	33.80 - 38.04
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M			
	F	7.63	.41	6.95 - 8.32
CALF CIRC	M			
	F	12.67	.72	11.47 - 13.86
HIP BREADTH	M			
	F	12.49	.51	11.65 - 13.33
HIP CIRC	M			
	F	33.50	.87	32.07 - 34.93
UPPER THIGH CIRC	M			
	F	19.88	.95	18.32 - 21.44
WAIST CIRC	M			
	F	25.03	2.02	21.71 - 28.36

*UNITS ARE INCHES OR POUNDS.

TABLE 26
20 SIZE PROGRAM FOR THE LOWER BODY*
SMALL REGULAR

THE RANGE FOR CROTCH HEIGHT 28.00 - 30.99
THE RANGE FOR HIP CIRCUMFERENCE 32.00 - 34.99

MALES N = 207 TARIFF PERCENTAGE = 3.13%
FEMALES N = 104 TARIFF PERCENTAGE = 7.90%

	SEX	MID-SIZE SZ-50 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	121.35	12.20 101.21 - 141.49	
	F	104.49	9.41 38.95 - 120.02	
*** HEIGHTS ***				
CALF HEIGHT	M	12.57	.90 11.09 - 14.05	13.15
	F	12.43	.61 11.43 - 13.44	
CROTCH HEIGHT	M	29.50	.87 28.07 - 30.93	31.00
	F	29.50	.87 28.07 - 30.93	
KNEECAP HEIGHT	M	18.81	.98 17.20 - 20.42	19.66
	F	18.45	.63 17.42 - 19.48	
STATURE	M	63.69	1.65 60.96 - 66.42	
	F	62.61	1.60 59.97 - 65.25	
WAIST HEIGHT	M	37.97	1.38 35.70 - 40.24	39.61
	F	38.96	1.29 36.84 - 41.08	
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	8.31	.45 7.56 - 9.06	8.57
	F	7.71	.41 7.03 - 8.39	
CALF CIRC	M	13.28	.76 12.03 - 14.52	13.75
	F	12.65	.72 11.45 - 13.85	
HIP BREADTH	M	11.91	.46 11.15 - 12.67	
	F	12.48	.51 11.64 - 13.32	13.00
HIP CIRC	M	33.50	.87 32.07 - 34.93	
	F	33.50	.87 32.07 - 34.93	35.00
UPPER THIGH CIRC	M	19.71	1.14 17.13 - 21.58	
	F	19.71	.95 18.15 - 21.27	20.62
WAIST CIRC	M	28.07	1.97 24.82 - 31.32	
	F	24.85	2.02 21.52 - 28.17	29.55

*UNITS ARE INCHES OR POUNDS.

TABLE 27
20 SIZE PROGRAM FOR THE LOWER BODY*
SMALL LONG

THE RANGE FOR CROTCH HEIGHT 31.00 - 33.99
THE RANGE FOR HIP CIRCUMFERENCE 32.00 - 34.99

MALES N = 755 TARIFF PERCENTAGE = 11.41%
FEMALES N = 25 TARIFF PERCENTAGE = 1.90%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	127.09	12.20	106.96 - 147.23
	F	110.34	9.41	94.81 - 125.86
*** HEIGHTS ***				
CALF HEIGHT	M	13.58	.90	12.10 - 15.06
	F	13.72	.61	12.72 - 14.73
CROTCH HEIGHT	M	32.50	.87	31.07 - 33.93
	F	32.50	.87	31.07 - 33.93
KNEECAP HEIGHT	M	20.26	.98	18.65 - 21.87
	F	20.09	.63	19.06 - 21.12
STATURE	M	67.06	1.65	64.33 - 69.78
	F	66.22	1.60	63.57 - 68.86
WAIST HEIGHT	M	40.77	1.38	38.50 - 43.05
	F	42.00	1.29	39.87 - 44.12
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	8.41	.45	7.65 - 9.16
	F	7.79	.41	7.11 - 8.47
CALF CIRC	M	13.28	.76	12.03 - 14.52
	F	12.63	.72	11.44 - 13.83
HIP BREADTH	M	12.06	.46	11.30 - 12.82
	F	12.47	.51	11.63 - 13.30
HIP CIRC	M	33.50	.67	32.07 - 34.93
	F	33.50	.87	32.07 - 34.93
UPPER THIGH CIRC	M	19.49	1.14	17.62 - 21.36
	F	19.54	.95	17.98 - 21.10
WAIST CIRC	M	27.64	1.97	24.39 - 30.89
	F	24.66	2.02	21.33 - 27.99

*UNITS ARE INCHES OR POUNDS.

TABLE 28
20 SIZE PROGRAM FOR THE LOWER BODY*
SMALL X-LONG

THE RANGE FOR CROTCH HEIGHT 34.00 - 36.99
THE RANGE FOR HIP CIRCUMFERENCE 32.00 - 34.99

MALES N = 263 TARIFF PERCENTAGE = 3.98%
FEMALES N = 1 TARIFF PERCENTAGE = .08%

WEIGHT	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
	M	132.84	12.20	112.70 - 152.98
	F			
*** HEIGHTS ***				
CALF HEIGHT	M	14.59	.90	13.12 - 16.07
	F			15.17
CROTCH HEIGHT	M	35.50	.87	34.07 - 36.93
	F			37.00
KNEECAP HEIGHT	M	21.71	.98	20.11 - 23.32
	F			22.56
STATURE	M	70.42	1.65	67.69 - 73.15
	F			
WAIST HEIGHT	M	43.58	1.38	41.31 - 45.85
	F			45.22
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	8.50	.45	7.75 - 9.25
	F			8.76
CALF CIRC	M	13.27	.76	12.03 - 14.52
	F			13.75
HIP BREADTH	M	12.22	.46	11.46 - 12.98
	F			12.70
HIP CIRC	M	33.50	.87	32.07 - 34.93
	F			35.00
UPPER THIGH CIRC	M	19.27	1.14	17.40 - 21.15
	F			20.16
WAIST CIRC	M	27.21	1.97	23.96 - 30.46
	F			28.69

*UNITS ARE INCHES OR POUNDS.

TABLE 29
20 SIZE PROGRAM FOR THE LOWER BODY*
MEDIUM SHORT

THE RANGE FOR CROTCH HEIGHT 24.00 - 26.99
THE RANGE FOR HIP CIRCUMFERENCE 35.00 - 37.99

MALES N = 1 TARIFF PERCENTAGE = .02%
FEMALES N = 20 TARIFF PERCENTAGE = 1.52%

WEIGHT	SEX	MID-SIZE SZ-SU		RANGE TO BE ACCOMODATED	RECOM-MENDED VALUE
		M	F		
*** HEIGHTS ***					
CALF HEIGHT	M	116.12	9.41	100.58 - 131.65	
	F	10.81	.61	9.81 - 11.82	11.51
CROTCH HEIGHT	M	25.50	.67	24.07 - 26.93	27.00
	F	16.33	.63	15.30 - 17.37	17.19
STATURE	M	58.43	1.60	55.79 - 61.07	
	F	35.19	1.29	33.07 - 37.32	36.85
WAIST HEIGHT	M				
	F				
*** CIRCUMFERENCES AND BREADTHS ***					
ANKLE CIRC	M	7.93	.41	7.24 - 8.61	8.13
	F				
CALF CIRC	M	13.53	.72	12.34 - 14.73	13.95
	F				
HIP BREADTH	M	13.55	.51	12.71 - 14.39	14.08
	F				
HIP CIRC	M	36.50	.87	35.07 - 37.93	38.00
	F				
UPPER THIGH CIRC	M	21.94	.95	20.37 - 23.50	22.85
	F				
WAIST CIRC	M	27.39	2.02	24.07 - 30.72	28.45
	F				

*UNITS ARE INCHES OR POUNDS.

TABLE 30
20 SIZE PROGRAM FOR THE LOWER BODY*
MEDIUM REGULAR

THE RANGE FOR CROTCH HEIGHT 27.00 - 29.99
THE RANGE FOR HIP CIRCUMFERENCE 35.00 - 37.99

MALES N = 123 TARIFF PERCENTAGE = 1.86%
FEMALES N = 315 TARIFF PERCENTAGE = 23.92%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	145.20	12.20	125.06 - 165.33
	F	121.97	9.41	106.44 - 137.51
*** HEIGHTS ***				
CALF HEIGHT	M	12.38	.90	10.90 - 13.86
	F	12.10	.81	11.10 - 13.11
CROTCH HEIGHT	M	28.50	.87	27.07 - 29.93
	F	28.50	.87	27.07 - 29.93
KNEECAP HEIGHT	M	18.56	.98	16.95 - 20.17
	F	17.98	.83	16.94 - 19.01
STATURE	M	63.44	1.65	60.71 - 66.17
	F	62.04	1.60	59.40 - 64.68
WAIST HEIGHT	M	37.51	1.38	35.24 - 39.79
	F	39.23	1.29	36.11 - 40.35
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	8.71	.45	7.96 - 9.46
	F	8.00	.41	7.32 - 8.69
CALF CIRC	M	14.23	.76	12.98 - 15.47
	F	13.51	.72	12.32 - 14.71
HIP BREADTH	M	12.68	.46	11.92 - 13.44
	F	13.54	.51	12.70 - 14.38
HIP CIRC	M	36.50	.87	35.07 - 37.93
	F	36.50	.87	35.07 - 37.93
UPPER THIGH CIRC	M	21.76	1.14	19.89 - 23.63
	F	21.76	.95	20.20 - 23.33
WAIST CIRC	M	31.60	1.97	28.35 - 34.84
	F	27.21	2.02	23.88 - 30.53

*UNITS ARE INCHES OR POUNDS.

TABLE 31
20 SIZE PROGRAM FOR THE LOWER BODY*
MEDIUM LONG

THE RANGE FOR CROTCH HEIGHT 30.00 - 32.99
THE RANGE FOR HIP CIRCUMFERENCE 35.00 - 37.99

MALES N = 1443 TARIFF PERCENTAGE = 21.81%
FEMALES N = 248 TARIFF PERCENTAGE = 18.83%

	SEX	MID-SIZE SZ-50 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	150.94	12.20 130.80 - 171.08	
	F	127.83	9.41 112.29 - 143.36	
*** HEIGHTS ***				
CALF HEIGHT	M	13.39	.90 11.91 - 14.87	13.97
	F	13.39	.61 12.39 - 14.40	
CROTCH HEIGHT	M	31.50	.87 30.07 - 32.93	33.00
	F	31.50	.87 30.07 - 32.93	
KNEECAP HEIGHT	M	20.02	.98 18.41 - 21.62	20.86
	F	19.62	.63 18.58 - 20.65	
STATURE	M	66.80	1.65 64.07 - 69.53	
	F	65.65	1.50 63.01 - 68.29	
WAIST HEIGHT	M	40.32	1.36 38.05 - 42.59	41.96
	F	41.27	1.29 39.14 - 43.39	
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	8.80	.45 8.05 - 9.55	9.06
	F	8.08	.41 7.40 - 8.76	
CALF CIRC	M	14.22	.76 12.98 - 15.47	14.70
	F	13.49	.72 12.30 - 14.69	
HIP BREADTH	M	12.83	.45 12.07 - 13.59	14.05
	F	13.53	.51 12.69 - 14.37	
HIP CIRC	M	36.50	.87 35.07 - 37.93	38.00
	F	36.50	.87 35.07 - 37.93	
UPPER THIGH CIRC	M	21.54	1.14 19.67 - 23.42	
	F	21.59	.95 20.03 - 23.15	22.50
WAIST CIRC	M	31.16	1.97 27.92 - 34.41	32.64
	F	27.02	2.02 23.69 - 30.35	

*UNITS ARE INCHES OR POUNDS.

TABLE 32
20 SIZE PROGRAM FOR THE LOWER BODY*
MEDIUM X-LONG

THE RANGE FOR CROTCH HEIGHT 33.00 - 35.99
THE RANGE FOR HIP CIRCUMFERENCE 35.00 - 37.99

MALES N = 1520 TARIFF PERCENTAGE = 22.98%
FEMALES N = 23 TARIFF PERCENTAGE = 1.75%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMMODATED	RECOM- MENDED VALUE
WEIGHT	M	156.69	12.20 .36.55 - 176.82	
	F	133.68	9.41 118.15 - 149.22	
*** HEIGHTS ***				
CALF HEIGHT	M	14.40	.90 12.93 - 15.88	14.98
	F	14.68	.61 13.68 - 15.69	
CROTCH HEIGHT	M	34.50	.87 33.07 - 35.93	36.00
	F	34.50	.87 33.07 - 35.93	
KNEECAP HEIGHT	M	21.47	.98 19.86 - 23.08	22.31
	F	21.26	.63 20.22 - 22.29	
STATURE	M	70.16	1.65 67.43 - 72.89	
	F	69.26	1.60 66.61 - 71.90	
WAIST HEIGHT	M	43.12	1.38 40.85 - 45.40	44.77
	F	44.30	1.29 42.18 - 46.43	
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	8.90	.45 8.15 - 9.65	9.16
	F	8.16	.41 7.48 - 8.84	
CALF CIRC	M	14.22	.76 12.97 - 15.47	14.70
	F	13.47	.72 12.28 - 14.67	
HIP BREADTH	M	12.98	.46 12.22 - 13.74	14.04
	F	13.51	.51 12.67 - 14.35	
HIP CIRC	M	36.50	.87 35.07 - 37.93	38.00
	F	36.50	.87 35.07 - 37.93	
UPPER THIGH CIRC	M	21.33	1.14 19.45 - 23.20	22.33
	F	21.42	.95 19.86 - 22.98	
WAIST CIRC	M	30.73	1.97 27.49 - 33.98	32.21
	F	26.83	2.02 23.50 - 30.16	

*UNITS ARE INCHES OR POUNDS.

TABLE 33
20 SIZE PROGRAM FOR THE LOWER BODY*
MEDIUM XX-LONG

THE RANGE FOR CROTCH HEIGHT 36.00 - 38.99
THE RANGE FOR HIP CIRCUMFERENCE 35.00 - 37.99

MALES N = 171 TARIFF PERCENTAGE = 2.59%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

WEIGHT	SEX	MID-SIZE SZ-SD		RANGE TO BE ACCOMODATED	RECOM-MENDED VALUE
		VALUE			
*** HEIGHTS ***					
CALF HEIGHT	M	15.42	.90	13.94 - 16.89	16.00
	F				
CROTCH HEIGHT	M	37.50	.87	36.07 - 38.93	39.00
	F				
KNEECAP HEIGHT	M	22.92	.98	21.31 - 24.53	23.76
	F				
STATURE	M	73.52	1.65	70.80 - 76.25	
	F				
WAIST HEIGHT	M	45.93	1.38	43.66 - 48.20	47.57
	F				
*** CIRCUMFERENCES AND BREADTHS ***					
ANKLE CIRC	M	8.99	.45	8.24 - 9.74	9.25
	F				
CALF CIRC	M	14.22	.76	12.97 - 15.47	14.70
	F				
HIP BREADTH	M	13.14	.45	12.38 - 13.90	13.62
	F				
HIP CIRC	M	36.50	.87	35.07 - 37.93	38.00
	F				
UPPER THIGH CIRC	M	21.11	1.14	19.24 - 22.98	21.99
	F				
WAIST CIRC	M	30.30	1.97	27.05 - 33.55	31.78
	F				

*UNITS ARE INCHES OR POUNDS.

TABLE 34
20 SIZE PROGRAM FOR THE LOWER BODY*
LARGE SHORT

THE RANGE FOR CROTCH HEIGHT 26.00 - 28.99
THE RANGE FOR HIP CIRCUMFERENCE 38.00 - 40.99

MALES N = 26 TARIFF PERCENTAGE = .39%
FEMALES N = 90 TARIFF PERCENTAGE = 6.83%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	139.46	9.41 123.92 - 154.99	
* * * HEIGHTS * * *				
CALF HEIGHT	M			
	F	11.77	.61 10.77 - 12.78	12.47
CROTCH HEIGHT	M			
	F	27.50	.87 26.07 - 28.93	29.00
KNEECAP HEIGHT	M			
	F	17.50	.63 16.47 - 18.53	18.36
STATURE	M			
	F	61.47	1.60 58.83 - 64.11	
WAIST HEIGHT	M			
	F	37.50	1.29 35.38 - 39.62	39.16
* * * CIRCUMFERENCES AND BREADTHS * * *				
ANKLE CIRC	M			
	F	8.30	.41 7.62 - 8.98	8.50
CALF CIRC	M			
	F	14.37	.72 13.18 - 15.57	14.79
HIP BREADTH	M			
	F	14.60	.51 13.76 - 15.44	15.13
HIP CIRC	M			
	F	39.50	.87 38.07 - 40.93	41.00
UPPER THIGH CIRC	M			
	F	23.82	.95 22.26 - 25.38	24.73
WAIST CIRC	M			
	F	29.56	2.02 26.24 - 32.89	30.62

*UNITS ARE INCHES OR POUNDS.

TABLE 35
20 SIZE PROGRAM FOR THE LOWER BODY*
LARGE REGULAR

THE RANGE FOR CROTCH HEIGHT 29.00 - 31.99
THE RANGE FOR HIP CIRCUMFERENCE 38.00 - 40.99

MALES N = 401 TARIFF PERCENTAGE = 6.06%
FEMALES N = 268 TARIFF PERCENTAGE = 20.35%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	174.79	12.20	154.65 - 194.93
	F	145.31	9.41	129.78 - 160.85
*** HEIGHTS ***				
CALF HEIGHT	M	13.20	.90	11.72 - 14.68
	F	13.06	.61	12.06 - 14.07
CROTCH HEIGHT	M	30.50	.87	29.07 - 31.93
	F	30.50	.87	29.07 - 31.93
KNEECAP HEIGHT	M	19.77	.98	18.16 - 21.38
	F	19.14	.63	18.11 - 20.17
STATURE	M	66.55	1.65	63.82 - 69.28
	F	65.08	1.60	62.44 - 67.72
WAIST HEIGHT	M	39.86	1.38	37.59 - 42.14
	F	40.54	1.29	38.41 - 42.66
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	9.20	.45	8.45 - 9.95
	F	8.38	.41	7.69 - 9.06
CALF CIRC	M	15.17	.76	13.93 - 16.42
	F	14.35	.72	13.16 - 15.55
HIP BREADTH	M	13.60	.46	12.84 - 14.36
	F	14.59	.51	13.75 - 15.43
HIP CIRC	M	39.50	.87	38.07 - 40.93
	F	39.50	.87	38.07 - 40.93
UPPER THIGH CIRC	M	23.59	1.14	21.72 - 25.47
	F	23.65	.95	22.08 - 25.21
WAIST CIRC	M	34.69	1.97	31.44 - 37.94
	F	29.38	2.02	26.05 - 32.70

*UNITS ARE INCHES OR POUNDS.

TABLE 36
20 SIZE PROGRAM FOR THE LOWER BODY*
LARGE LONG

THE RANGE FOR CROTCH HEIGHT 32.00 - 34.99
THE RANGE FOR HIP CIRCUMFERENCE 38.00 - 40.99

MALES N = 970 TARIFF PERCENTAGE = 14.66%
FEMALES N = 89 TARIFF PERCENTAGE = 6.76%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	180.53	12.20	160.40 - 200.67
	F	151.17	9.41	135.63 - 166.70
*** HEIGHTS ***				
CALF HEIGHT	M	14.21	.90	12.74 - 15.69
	F	14.35	.61	13.35 - 15.36
CROTCH HEIGHT	M	33.50	.87	32.07 - 34.93
	F	33.50	.87	32.07 - 34.93
KNEECAP HEIGHT	M	21.22	.98	19.61 - 22.83
	F	20.78	.63	19.75 - 21.81
STATURE	M	69.91	1.65	67.18 - 72.64
	F	68.69	1.60	66.05 - 71.33
WAIST HEIGHT	M	42.67	1.38	40.40 - 44.94
	F	43.57	1.29	41.45 - 45.70
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	9.29	.45	8.54 - 10.04
	F	8.45	.41	7.77 - 9.14
CALF CIRC	M	15.17	.76	13.92 - 16.42
	F	14.33	.72	13.14 - 15.53
HIP BREADTH	M	13.75	.46	12.99 - 14.51
	F	14.58	.51	13.74 - 15.42
HIP CIRC	M	39.50	.87	38.07 - 40.93
	F	39.50	.87	38.07 - 40.93
UPPER THIGH CIRC	M	23.38	1.14	21.50 - 25.25
	F	23.47	.95	21.91 - 25.03
WAIST CIRC	M	34.26	1.97	31.01 - 37.51
	F	29.19	2.02	25.86 - 32.52

*UNITS ARE INCHES OR POUNDS.

TABLE 37
20 SIZE PROGRAM FOR THE LOWER BODY*
LARGE X-LONG

THE RANGE FOR CROTCH HEIGHT 35.00 - 37.99
THE RANGE FOR HIP CIRCUMFERENCE 38.00 - 40.99

MALES N = 291 TARIFF PERCENTAGE = 4.40%
FEMALES N = 2 TARIFF PERCENTAGE = .15%

	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M F	186.28 12.20	166.14 - 206.42	
*** HEIGHTS ***				
CALF HEIGHT	M F	15.23 .90	13.75 - 16.70	15.81
CROTCH HEIGHT	M F	36.50 .87	35.07 - 37.93	38.00
KNEECAP HEIGHT	M F	22.67 .98	21.06 - 24.28	23.51
STATURE	M F	73.27 1.65	70.54 - 76.00	
WAIST HEIGHT	M F	45.47 1.38	43.20 - 47.75	47.12
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M F	9.39 .45	8.64 - 10.14	9.65
CALF CIRC	M F	15.17 .76	13.92 - 16.42	15.65
HIP BREADTH	M F	13.90 .46	13.14 - 14.66	14.39
HIP CIRC	M F	39.50 .87	38.07 - 40.93	41.00
UPPER THIGH CIRC	M F	23.16 1.14	21.29 - 25.03	24.04
WAIST CIRC	M F	33.83 1.97	30.58 - 37.07	35.30

*UNITS ARE INCHES OR POUNDS.

TABLE 38
20 SIZE PROGRAM FOR THE LOWER BODY*
X-LARGE SHORT

THE RANGE FOR CROTCH HEIGHT 26.00 - 28.99
THE RANGE FOR HIP CIRCUMFERENCE 41.00 - 43.99

MALES N = 6 TARIFF PERCENTAGE = .09%
FEMALES N = 18 TARIFF PERCENTAGE = 1.37%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	158.89	9.41 143.36 - 174.43	
*** HEIGHTS ***				
CALF HEIGHT	M			
	F	11.87	.61 10.87 - 12.88	12.57
CROTCH HEIGHT	M			
	F	27.50	.87 26.07 - 28.93	29.00
KNEECAP HEIGHT	M			
	F	17.57	.63 16.54 - 18.60	18.43
STATURE	M			
	F	62.11	1.60 59.47 - 64.75	
WAIST HEIGHT	M			
	F	37.78	1.29 35.66 - 39.91	39.44
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M			
	F	8.62	.41 7.94 - 9.30	8.82
CALF CIRC	M			
	F	15.23	.72 14.03 - 16.42	15.64
HIP BREADTH	M			
	F	15.66	.51 14.82 - 16.50	16.19
HIP CIRC	M			
	F	42.50	.87 41.07 - 43.93	44.00
UPPER THIGH CIRC	M			
	F	25.81	.95 24.25 - 27.37	26.73
WAIST CIRC	M			
	F	31.86	2.02 28.53 - 35.19	32.91

*UNITS ARE INCHES OR POUNDS.

TABLE 39
20 SIZE PROGRAM FOR THE LOWER BODY*
X-LARGE REGULAR

THE RANGE FOR CROTCH HEIGHT 29.00 - 31.99
THE RANGE FOR HIP CIRCUMFERENCE 41.00 - 43.99

MALES N = 87 TARIFF PERCENTAGE = 1.32%
FEMALES N = 50 TARIFF PERCENTAGE = 3.80%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMMODATED	RECOM- MENDED VALUE
WEIGHT	M	200.55	12.20	180.41 - 220.69
	F	164.75	9.41	149.22 - 180.28
*** HEIGHTS ***				
CALF HEIGHT	M	13.35	.90	11.87 - 14.83
	F	13.16	.61	12.16 - 14.17
CROTCH HEIGHT	M	30.50	.87	29.07 - 31.93
	F	30.50	.87	29.07 - 31.93
KNEECAP HEIGHT	M	20.00	.98	18.39 - 21.61
	F	19.21	.63	18.18 - 20.24
STATURE	M	67.41	1.65	64.68 - 70.14
	F	65.72	1.60	63.07 - 68.36
WAIST HEIGHT	M	40.35	1.38	38.07 - 42.62
	F	40.82	1.29	38.70 - 42.94
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	9.62	.45	8.87 - 10.37
	F	8.70	.41	8.01 - 9.38
CALF CIRC	M	16.12	.76	14.87 - 17.37
	F	15.21	.72	14.01 - 16.40
HIP BREADTH	M	14.41	.46	13.65 - 15.17
	F	15.65	.51	14.81 - 16.49
HIP CIRC	M	42.50	.87	41.07 - 43.93
	F	42.50	.87	41.07 - 43.93
UPPER THIGH CIRC	M	25.57	1.14	23.70 - 27.45
	F	25.64	.95	24.08 - 27.20
WAIST CIRC	M	38.07	1.97	34.82 - 41.32
	F	31.67	2.02	28.34 - 35.00

*UNITS ARE INCHES OR POUNDS.

TABLE 40
20 SIZE PROGRAM FOR THE LOWER BODY*
X-LARGE LONG

THE RANGE FOR CROTCH HEIGHT 32.00 - 34.99
THE RANGE FOR HIP CIRCUMFERENCE 41.00 - 43.99

MALES N = 217 TARIFF PERCENTAGE = 3.28%
FEMALES N = 19 TARIFF PERCENTAGE = 1.44%

	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	206.30	12.20	186.16 - 226.43
	F	170.60	9.41	155.07 - 186.14
*** HEIGHTS ***				
CALF HEIGHT	M	14.36	.90	12.08 - 15.84
	F	14.45	.61	13.45 - 15.46
CROTCH HEIGHT	M	33.50	.87	32.07 - 34.93
	F	33.50	.87	32.07 - 34.93
KNEECAP HEIGHT	M	21.45	.98	19.84 - 23.06
	F	20.85	.63	19.82 - 21.88
STATURE	M	70.78	1.65	68.05 - 73.50
	F	69.32	1.60	66.68 - 71.97
WAIST HEIGHT	M	43.15	1.38	40.88 - 45.42
	F	43.86	1.29	41.73 - 45.98
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	9.72	.45	8.97 - 10.47
	F	8.77	.41	8.09 - 9.46
CALF CIRC	M	16.12	.76	14.87 - 17.37
	F	15.19	.72	13.99 - 16.38
HIP BREADTH	M	14.57	.46	13.81 - 15.33
	F	15.64	.51	14.80 - 16.48
HIP CIRC	M	42.50	.87	41.07 - 43.93
	F	42.50	.87	41.07 - 43.93
UPPER THIGH CIRC	M	25.36	1.14	23.48 - 27.23
	F	25.47	.95	23.91 - 27.03
WAIST CIRC	M	37.64	1.97	34.39 - 40.88
	F	31.48	2.02	28.16 - 34.81

*UNITS ARE INCHES OR POUNDS.

TABLE 41
20 SIZE PROGRAM FOR THE LOWER BODY*
X-LARGE X-LONG

THE RANGE FOR CROTCH HEIGHT 35.00 - 37.99
THE RANGE FOR HIP CIRCUMFERENCE 41.00 - 43.99

MALES N = 69 TARIFF PERCENTAGE = 1.04%
FEMALES N = 1 TARIFF PERCENTAGE = .08%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	212.04	12.20 191.90 - 232.18	
	F			
*** HEIGHTS ***				
CALF HEIGHT	M	15.37	.90 13.89 - 16.85	15.95
	F			
CROTCH HEIGHT	M	36.50	.87 35.07 - 37.93	38.00
	F			
KNEECAP HEIGHT	M	22.90	.98 21.30 - 24.51	23.75
	F			
STATURE	M	74.14	1.65 71.41 - 76.87	
	F			
WAIST HEIGHT	M	45.96	1.38 43.68 - 48.23	47.60
	F			
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	9.81	.45 9.06 - 10.56	10.07
	F			
CALF CIRC	M	16.12	.76 14.87 - 17.37	16.59
	F			
HIP BREADTH	M	14.72	.46 13.96 - 15.48	15.21
	F			
HIP CIRC	M	42.50	.87 41.07 - 43.93	44.00
	F			
UPPER THIGH CIRC	M	25.14	1.14 23.27 - 27.01	26.02
	F			
WAIST CIRC	M	37.21	1.97 33.96 - 40.45	38.68
	F			

*UNITS ARE INCHES OR POUNDS.

TABLE 42
20 SIZE PROGRAM FOR THE LOWER BODY*
XX-LARGE REGULAR

THE RANGE FOR CROTCH HEIGHT 29.00 - 31.99
THE RANGE FOR HIP CIRCUMFERENCE 44.00 - 46.99

MALES N = 10 TARIFF PERCENTAGE = .15%
FEMALES N = 7 TARIFF PERCENTAGE = .53%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M			
	F	184.19	9.41	168.65 - 199.72
*** HEIGHTS ***				
CALF HEIGHT	M			
	F	13.26	.61	12.26 - 14.27
CROTCH HEIGHT	M			
	F	30.50	.87	29.07 - 31.93
KNEECAP HEIGHT	M			
	F	19.28	.63	18.29 - 20.32
STATURE	M			
	F	66.35	1.60	63.71 - 68.99
WAIST HEIGHT	M			
	F	41.10	1.29	38.98 - 43.23
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M			
	F	9.02	.41	8.33 - 9.70
CALF CIRC	M			
	F	16.06	.72	14.87 - 17.26
HIP BREADTH	M			
	F	16.71	.51	15.87 - 17.55
HIP CIRC	M			
	F	45.50	.87	44.07 - 46.93
UPPER THIGH CIRC	M			
	F	27.64	.95	26.08 - 29.20
WAIST CIRC	M			
	F	33.97	2.02	30.64 - 37.29

*UNITS ARE INCHES OR POUNDS.

TABLE 43
20 SIZE PROGRAM FOR THE LOWER BODY*
XX-LARGE LONG

THE RANGE FOR CROTCH HEIGHT 32.00 - 34.99
THE RANGE FOR HIP CIRCUMFERENCE 44.00 - 46.99

MALES N = 34 TARIFF PERCENTAGE = .51%
FEMALES N = 3 TARIFF PERCENTAGE = .23%

	SEX	MID-SIZE SZ-SD VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
WEIGHT	M	232.06	12.20	211.92 - 252.20
	F			
*** HEIGHTS ***				
CALF HEIGHT	M	14.51	.90	13.03 - 15.99
	F			15.09
CROTCH HEIGHT	M	33.50	.87	32.07 - 34.93
	F			35.00
KNEECAP HEIGHT	M	21.69	.98	20.08 - 23.30
	F			22.53
STATURE	M	71.64	1.65	68.91 - 74.37
	F			
WAIST HEIGHT	M	43.63	1.38	41.36 - 45.90
	F			45.27
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	10.15	.45	9.40 - 10.90
	F			10.41
CALF CIRC	M	17.07	.75	15.82 - 18.32
	F			17.54
HIP BREADTH	M	15.38	.46	14.62 - 16.15
	F			15.87
HIP CIRC	M	45.50	.87	44.07 - 46.93
	F			47.00
UPPER THIGH CIRC	M	27.34	1.14	25.46 - 29.21
	F			28.22
WAIST CIRC	M	41.02	1.97	37.77 - 44.26
	F			42.49

* UNITS ARE INCHES OR POUNDS.

TABLE 44
20 SIZE PROGRAM FOR THE LOWER BODY*
XX-LARGE X-LONG

THE RANGE FOR CROTCH HEIGHT 35.00 ~ 37.99
THE RANGE FOR HIP CIRCUMFERENCE 44.00 ~ 46.99

MALES N = 15 TARIFF PERCENTAGE = .23%
FEMALES N = 0 TARIFF PERCENTAGE = 0.00%

WEIGHT	SEX	MID-SIZE SZ-S0 VALUE	RANGE TO BE ACCOMODATED	RECOM- MENDED VALUE
	M	237.80	12.20	217.67 - 257.94
	F			
*** HEIGHTS ***				
CALF HEIGHT	M	15.52	.90	14.04 ~ 17.00
	F			16.10
CROTCH HEIGHT	M	36.50	.87	35.07 ~ 37.93
	F			38.00
KNEECAP HEIGHT	M	23.14	.98	21.53 ~ 24.75
	F			23.98
STATURE	M	75.00	1.65	72.27 ~ 77.73
	F			
WAIST HEIGHT	M	46.44	1.38	44.16 ~ 48.71
	F			48.08
*** CIRCUMFERENCES AND BREADTHS ***				
ANKLE CIRC	M	10.24	.45	9.49 ~ 10.99
	F			10.50
CALF CIRC	M	17.07	.76	15.82 ~ 18.32
	F			17.54
HIP BREADTH	M	15.54	.46	14.78 ~ 16.30
	F			16.02
HIP CIRC	M	45.50	.87	44.07 ~ 46.93
	F			47.00
UPPER THIGH CIRC	M	27.12	1.14	25.25 ~ 28.99
	F			28.00
WAIST CIRC	M	40.58	1.97	37.34 ~ 43.83
	F			42.06

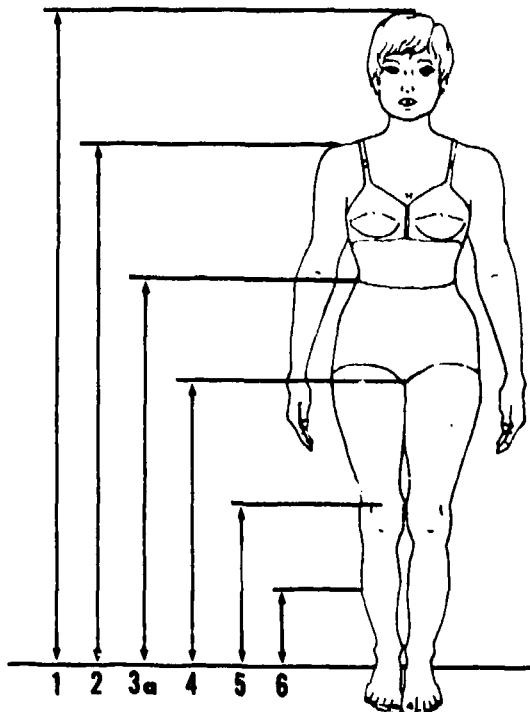
*UNITS ARE INCHES OR POUNDS.

APPENDIX A

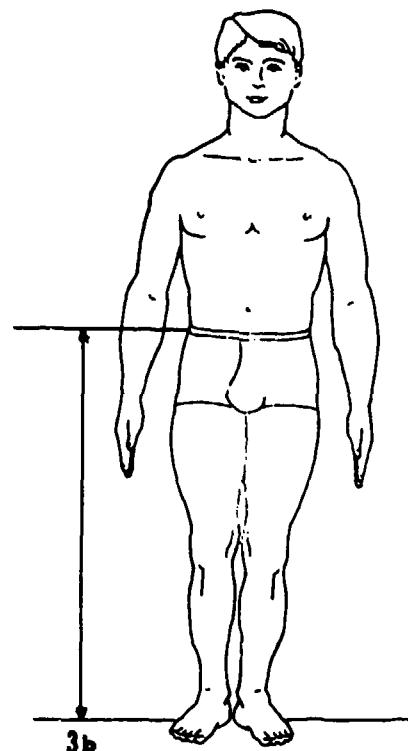
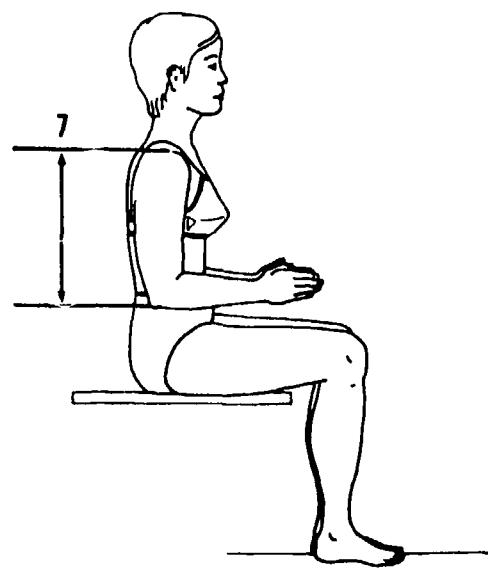
**VISUAL INDEX
AND
MEASUREMENT DESCRIPTIONS**

PRECEDING PAGE BLANK-NOT FILMED

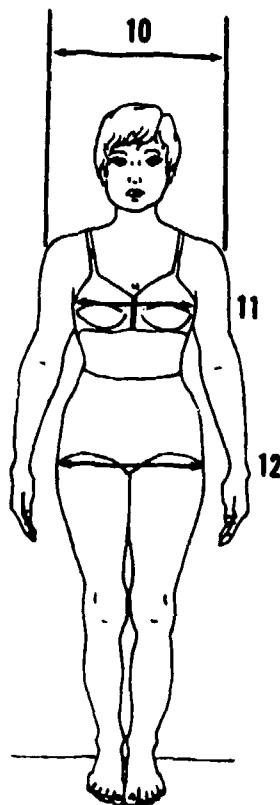
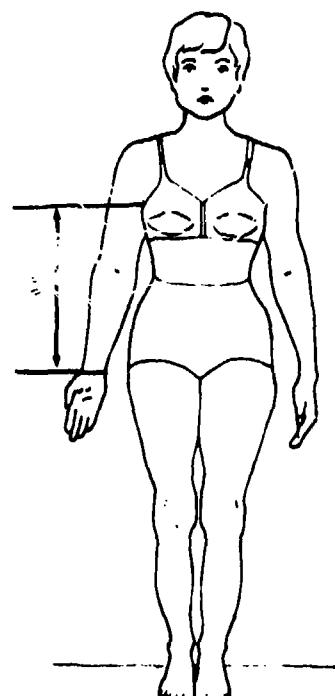
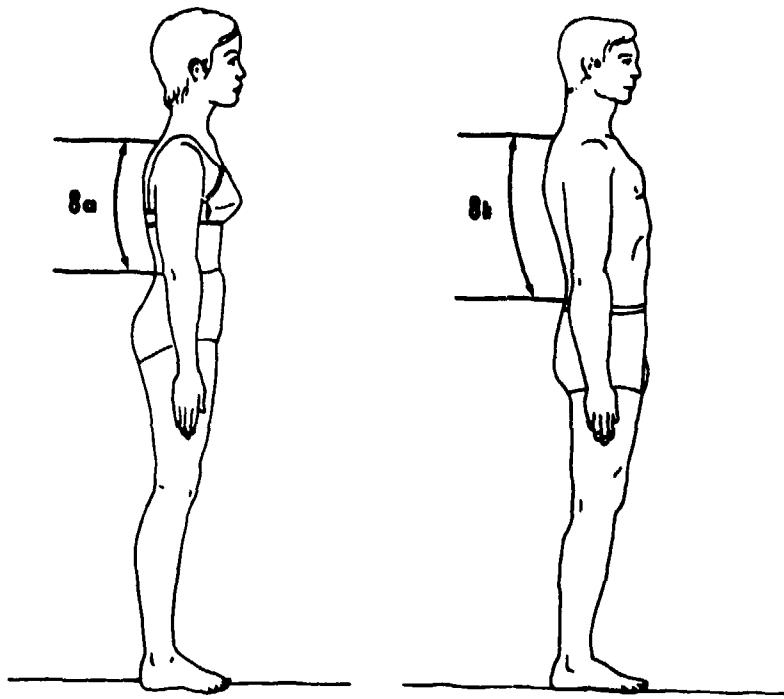
VISUAL INDEX

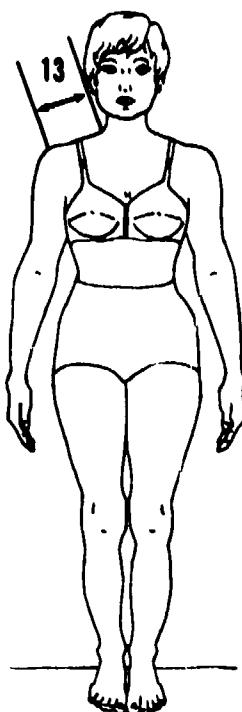


1. Stature
2. Shoulder height
3. Waist height
 - a. Female
 - b. Male
4. Crotch height
5. Kneecap height
6. Calf height
7. Shoulder to elbow length

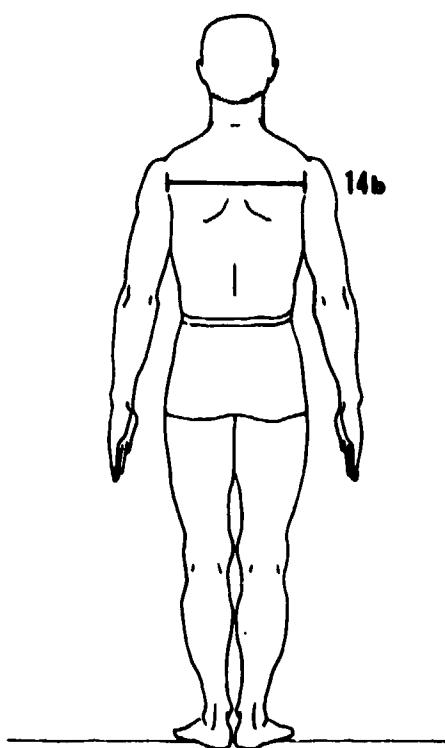
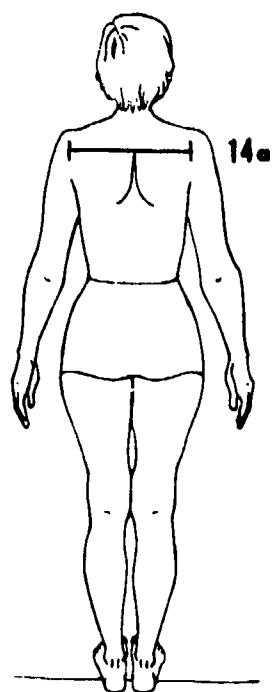
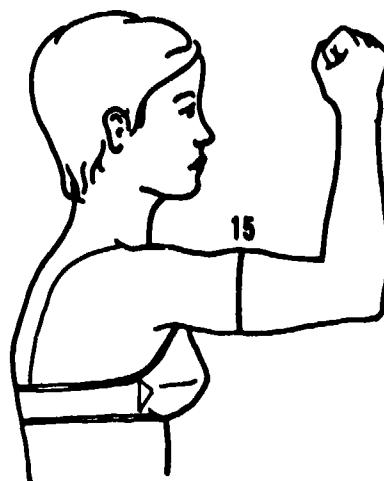


- 8. Waist back
 - a. Female
 - b. Male
- 9. Sleeve inseam
- 10. Shoulder breadth
- 11. Chest breadth
- 12. Hip breadth

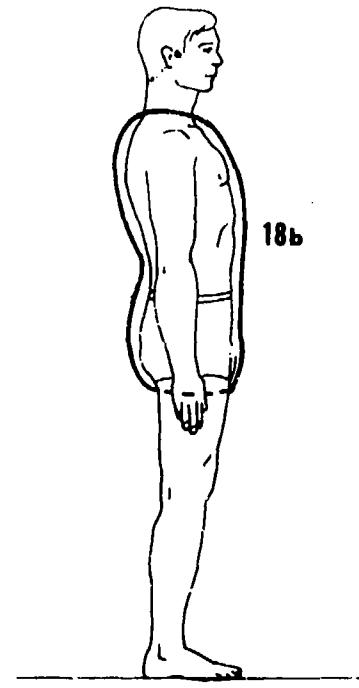
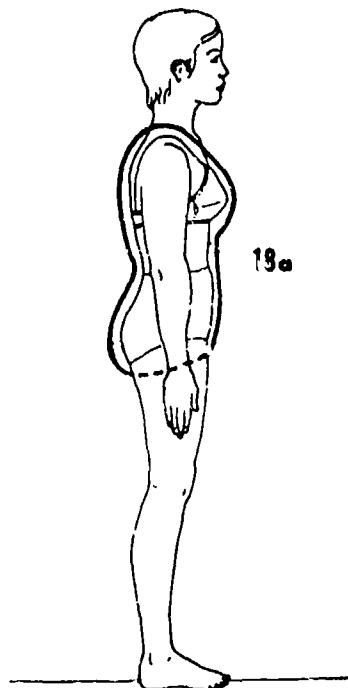
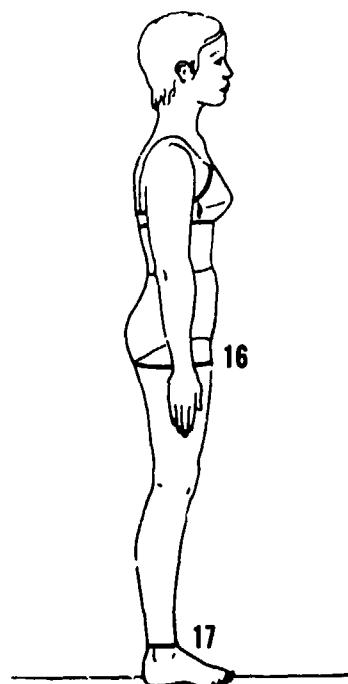
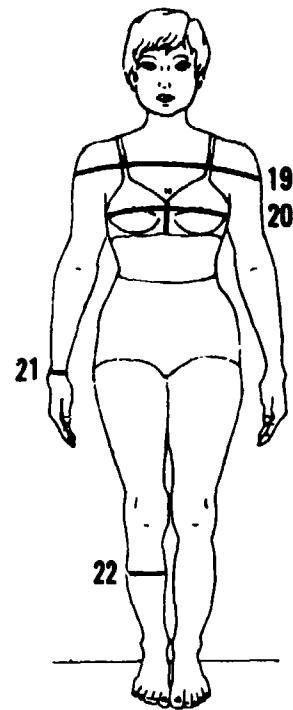




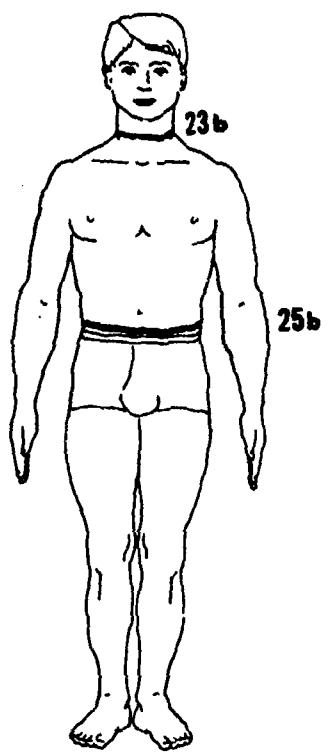
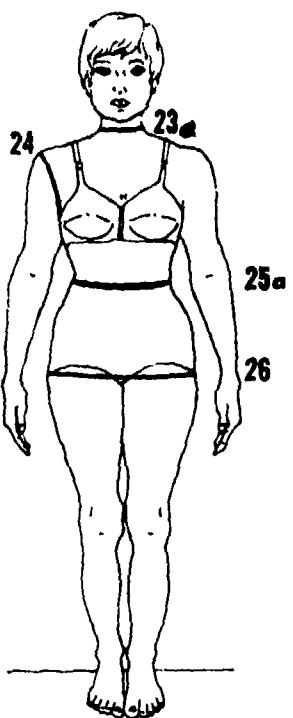
13. Shoulder length
14. Interscye, back
- a. Female
- b. Male
15. Biceps circumference



- 16. Upper thigh circumference
- 17. Ankle circumference
- 18. Vertical trunk circumference
 - a. Female
 - b. Male
- 19. Shoulder circumference
- 20. Chest/bust circumference
- 21. Wrist circumference
- 22. Calf circumference



23. Neck circumference
a. Female
b. Male
24. Arm circumference at scye
25. Waist circumference
a. Female
b. Male
26. Hip circumference



MEASUREMENT DESCRIPTIONS

WEIGHT

Women: the weight of the subject wearing underwear.
Men: same.

HEIGHTS AND LENGTHS

CALF HEIGHT

Women: the vertical distance from floor to the level of the maximum circumference of the calf.
Men: same.

CROTCH HEIGHT

Women: the vertical distance from floor to mid-point of crotch.
Men: same.

KNEECAP HEIGHT

Women: the vertical distance from floor to the top of the kneecap (patella).
Men: same.

SHOULDER HEIGHT

Women: the vertical distance from floor to acromion, the lateral edge of the acromial process of the scapula.
Men: same.

SHOULDER TO ELBOW

Women: the distance along the long axis of the upper arm from acromion to the inferior tip of the olecranon process of the elbow.
Men: same.

HEIGHTS AND LENGTHS (cont'd)

SLEEVE INSEAM

Women: the distance from the front edge of the armpit to the little finger side of the wrist measured with the arm held slightly away from the body, palm forward and the tape tense.

Men: same.

STATURE

Women: the vertical distance from floor to the top of the head.

Men: same.

WAIST BACK

Women: the surface distance from the natural waist to the seventh cervical vertebra (approximately at the base of the neck).

Men: the surface distance from the waist (at the level of the navel) to the seventh cervical vertebra (approximately at the base of the neck).

WAIST HEIGHT

Women: the vertical distance from the floor to the natural waist level.

Men: the vertical distance from the floor to the upper edge of the right hip bone.

ARCS AND BREADTHS

CHEST BREADTH

Women: the left to right breadth of the torso at the level of the bustpoints.

Men: the left to right breadth of the torso at the level of the nipples (thelion).

HIP BREADTH

Women: the maximum horizontal breadth of the hips.

Men: same.

ARCS AND BREADTHS (cont'd)

INTERSCYE BACK

Women: the surface distance across the back between points located midway between the upper ends of the armpit creases and the tips of the shoulders (acromion).

Men: the surface distance across the back between the upper end of the armpit creases.

SHOULDER BREADTH

Women: the horizontal distance across the maximum protrusion of the right and left deltoid muscles.

Men: same.

SHOULDER LENGTH

Women: the surface distance from the neck-shoulder junction on the side of the neck to the tip of the shoulder.

Men: same.

CIRCUMFERENCES

ANKLE CIRCUMFERENCE

Women: the minimum circumference of the ankle.

Men: same.

ARM CIRCUMFERENCE AT SCYE

Women: the circumference of the scye (armhole) measured with the tape passing through the armpit and over the tip of the shoulder.

Men: same.

BICEPS CIRCUMFERENCE FLEXED

Women: the circumference of the arm at the level of the maximum protrusion of the biceps, measured with the elbow flexed 90°, the upper arm horizontal and the fist tightly clenched.

Men: same.

CIRCUMFERENCES (cont'd)

CALF CIRCUMFERENCE

Women: the maximum circumference of the calf.

Men: same.

CHEST/BUST CIRCUMFERENCE

Women: the horizontal circumference of the trunk, measured with the tape passing over the bra points.

Men: the horizontal circumference of the trunk, measured with the tape passing over the nipples.

HIP CIRCUMFERENCE

Women: the maximum circumference of the hips at the level of the maximum posterior protrusion of the buttocks.

Men: same.

NECK CIRCUMFERENCE

Women: the circumference of the base of the neck; this circumference is not in a plane perpendicular to the axis of the neck.

Men: the circumference of the neck measured just below the "Adam's apple"; this circumference is measured on a plane slightly higher and closer to the perpendicular with regard to the neck axis than is the corresponding women's measurement.

SHOULDER CIRCUMFERENCE

Women: the horizontal circumference of the shoulders at the level of the greatest lateral protrusion of the deltoid muscles.

Men: same.

UPPER THIGH CIRCUMFERENCE

Women: the circumference of the leg measured at the level of the lowest point of the gluteal furrow (point at which the buttock meets the thigh).

Men: same.

CIRCUMFERENCES (cont'd)

VERTICAL TRUNK CIRCUMFERENCE

Women: the circumference of the torso measured with the tape passing through the crotch, over the protrusion of the buttock, the midshoulder point and the tip of the bra. The tape follows the contour of the body's back but not its front below the bustpoint.

Men: measured the same except that the tape generally follows the contours of the body's front and back.

WAIST CIRCUMFERENCE

Women: the horizontal circumference of the waist at "natural" waist level.

Men: the maximum horizontal circumference of the waist measured at the level of the navel.

WRIST CIRCUMFERENCE

Women: the circumference of the wrist at stylion (wrist bone on the thumb side of the hand).

Men: same.

APPENDIX B

**PROCEDURES FOR COMPUTING
SIZE VALUES**

~~PROCESSING PAGE BLANK-NOT FILMED~~

PROCEDURES FOR COMPUTING SIZE VALUES

Statistics to describe each size in each program were computed with the help of regression equations. The regression equations used were of the form, $Z = Ax + By + C$, where Z is the predicted dimension and x and y are the key sizing dimensions. If, for example, sleeve inseam were to be predicted from a given shoulder circumference and stature, then the equation would appear as follows:

$$\text{Sleeve Inseam} = (A \times \text{Shoulder Circ}) + (B \times \text{Stature}) + C$$

The values A , B , and C are computed using means, standard deviations, and correlation coefficients, between the three dimensions from a given sample: in this case, the 1977 Army women's sample or the 1966 Army men's sample. The equations are always specific to the sample from which they are derived. After computing the A , B , and C values for the 1977 Army women, the above equation appears as follows:

$$\begin{aligned}\text{Sleeve Inseam} &= (-0.0016 \times \text{Shoulder Circ}) + (0.2994 \times \text{Stature}) \\ &\quad + (-1.411 \text{ in.})\end{aligned}$$

This equation can then be used to predict sleeve inseam at any level of shoulder circumference and stature for U.S. Army women. "Mid-size" values used in this report were derived from such equations for each dimension from the midpoint of the key dimension categories. They represent the most likely value for a person at the midpoint of the size category.

To compute the mid-size value for sleeve inseam in size Medium Regular (see Table 11, page 32), for example, the midpoint shoulder circumference and stature values are used as predictors in the above equation. The range for shoulder circumference in that size is from 41.0 to 43.99 inches, so the shoulder circumference midpoint is approximately 42.5 inches. The range for stature in that size is from 66.0 to 69.99 inches, so the stature midpoint is approximately 68.0 inches. Inserting these values as predictors into the equation gives:

$$\begin{aligned}\text{Sleeve Inseam} &= (-0.0016 \times 42.5 \text{ in.}) + (0.2994 \times 68.0 \text{ in.}) \\ &\quad + (-1.411 \text{ in.}) = 18.8802 \text{ in.}\end{aligned}$$

This value rounds to 18.88 inches which is the mid-size value found on Table 11, page 32.

Regression equations are accompanied by an error term referred to as the standard error of estimate (SE EST), which is computed from the standard deviations and correlation coefficients. This term identifies the amount of variation in size to be expected about the most likely value. It functions much like the standard error of the mean for the total sample. The SE EST for the above equation is equal to 0.686 inches.

To create the size standard deviation (SZ-SD) which accompanies the mid-size value on the sizing tables, the SE EST was employed. The formula for computing the SZ-SD is as follows:

$$SZ\ SD_{(z)} = \sqrt{SE\ EST^2 + \frac{(A * SIZE\ WIDTH_{(x)})^2 + (B * SIZE\ WIDTH_{(y)})^2}{12}}$$

where A and B are the same as in the regression equation, size widths x and y are the size category interval widths for the key dimensions, and 1/12 is Sheppard's correction for grouping.

Since the sample used provides the necessary components to compute the SE EST, A, and B, the only actual variables left are the size widths.

For the upper body program, again, all the size category widths are the same -- the width for shoulder circumference is three inches and the width for stature is four inches. Therefore, the SZ-SD for all the sizes will be the same for each sex. Plugging these values into the above equation gives:

$$SZ\ SD_{(z)} = \sqrt{\frac{(0.686)^2 + (-0.0016 * 3.0\ in.)^2 + (0.2994 * 4.0\ in.)^2}{12}}$$
$$= 0.76819\ in.$$

This value rounds to 0.77 which is the value to be found in the sizing tables for this program.

Once the mid-size value and the SZ-SD were computed for each dimension, these statistics were employed to create the range-to-be-accommodated values. These values represent approximately the 5th to 95th percentile values for each sex within a size and are the mid-size values plus or minus 1.67 SZ-SD. The SZ-SD functions in the same way as the total sample standard deviation.

The last column of values found on the sizing tables contains recommended values. These values are predicted in the same way as the mid-size values except that they were computed from the largest key dimensions sizes in the category. Thus, for size Medium Regular in the upper body program, 43.99 and 69.99 inches were used as input for shoulder circumference and stature, respectively. In the case of sleeve inseam, the male regression equation was used with these values as input for this size. To predict the hip breadth recommended value, these values were used as input into the female equation. The sample (male or female) used to predict recommended values was selected so that the resulting values would be additive, as well as large enough to accommodate most persons of either sex within the size.